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## Choice Jersey Stock.

The one on the right is Garfield's Black Princess, ten years old, and a daughter of Garfield Stoke Pogis, who has thirty-eight tested daughters, a son of Exile of St. Lambert, who had more tested daughters than any bull living or dead. We have made claim that Garfield Stoke Pogis was the best son of Exile, certainly he has done more for the dairy interests of Vermont than any bull that ever lived. Garfield's Black Princess has a butter record of twenty-one pounds in seven days and a Babcock test of 425 pounds in one year.

The next is Princess Twilight, seven years old, a granddaughter of Garfield Stoke Pogis. She, with her first calf, gave in ten weeks 2190 pounds of milk, with an average Babcock test of 5.7 per cent., equal to 145 pounds of butter. Later she made a butter test of 163 pounds, from 2502 pounds of milk, in seven days. The third cow is Morning Glory, four years old, with a milk record of thirty pounds a week for twelve weeks, with first calf, and a butter record of fifteen pounds eight ounces in seven days.

What work has been done by this trio was in the ordinary way; no preparation was made at any time—just the usual dairy ration.

We have others equally as good or better, but as the St. Louis rules will exclude the older cow, it is very probable we shall not send any of the younger ones. We have always claimed for our herd constitution and persistency of milking. A long test is to our liking, and in our judgment the way to show the superiority of the Jersey breed as dairy cows.

The records of the Columbian test at Chicago will show the position of the Billings Farm herd; we had more cows accepted, won more premiums than any other herd, today we claim to stand still better. We have been on the alert to increase the producing capacity of our herd, and will be glad to compare with any breeder.

I do not think this is the time, nor can you wish that we should make an extended history of the herd; suffice it to say, that if the St. Louis results are better than we can show from our records, taking into account, of course, the climatic and other conditions, we are satisfied that the little Jersey will still stand at the top as the butter cow of the world.

GEORGE ATKIN  
Superintendent Billings Farm, Woodstock, Vt.

## The Philosophy of Green Manuring.

The almost marvelous effect of stable manure upon old and worn soils is familiar to farmers all over the land. This fact has been given to many an exaggerated opinion of the true value of stable manure. All fertile virgin soils are rich in humus. Humus is to the soil what the fly-wheel is to the steam engine. It gives stability, prevents sudden variations in temperature and moisture, and besides serving as a storehouse for the soluble parts of the manure or fertilizer put on the land.

More than this, humus harbors the microbes or organic ferments, to whose activity the process of soil nitrification is due. A soil lacking in humus is in almost all cases an unprofitable soil to crop. Sandy soils lose their original stock of humus more rapidly than clay soils, and the loss is more severely felt because in sandy soils humus, in addition to its other functions, serves to bind together the loose soil particles, rendering the soil less porous, and, therefore, less leachy. Good virgin soils possess at least four per cent. of humus in the top layer of twelve inches. Such soil in dry summer weather will contain at least sixteen per cent. of water. Similar soils after being cultivated for ten years without the addition of vegetable matter, will rarely contain over 2 1/2 per cent. of humus, and under conditions similar to the above, will not contain over twelve per cent. of water.

This difference in the water contents of the soil during the summer may make a difference between a profitable and an unprofitable crop on soils receiving exactly the same amount of fertilizer and tillage.

The addition of stable manure to worn soils adds humus. It also adds a new supply of organic ferments. To this more than to the really very small amount of plant food stable manure contains is its value due. But humus may generally be supplied to farm soils in a cheaper and more convenient form than stable manure, where the latter has to be purchased or hauled long distances.

In the leguminous order of plants we have a source, not only of humus, but also of the most costly ingredient of plant-food nitrogen. In almost any part of the United States some species of legumes may be found which can be grown during a season when the soil does not carry any regular crop. By utilizing such legumes

the farmer can keep an ample supply of humus in his soil, and at the same time supply all the nitrogen needed by an average staple crop.

Among the best plants for supplying humus and nitrogen to worn soils may be named all the true clovers, but more especially crimson clover—Trifolium incarnatum. The cow-pea of the South will grow almost anywhere in the United States and is unexcelled for this purpose. The vetches, especially the sand or hairy vetch, Vicia villosa, are very valuable in this connection. Lucerne and sweet clover are good where they succeed.

All the leguminous family are heavy consumers of lime and potash. To secure the best results from green or leguminous manuring we must feed the crop generously with the necessary mineral foods. The exact or least amount of potash and lime

fruit in, as it gets an immense amount of abuse on all hands, in consequence of its being so easy to move from place to place by rolling. Another thing, its contents, for one compartment, contains too great a quantity of fruit, and in order to carry well a pressure has to be used that virtually bruises every piece of fruit it contains. In the matter of the second-hand flour barrels, the best effort to free them of flour is futile, and I have seen, time and time again, handsome red fruit on being inspected in Liverpool at sales, to be covered with flour to an extent to make the apples look almost white.

So serious is the situation in the matter of packages that it is imperatively necessary for handlers of fruit, as well as growers, to get together and come to some understanding for a change in the style of package.

As most of your readers are aware I have

apples will yield them a profit to exceed anything they can raise on their farms.

I have been an exporter of apples to Europe for the last forty years and have, like many others, suffered losses from the bad landing conditions of shipments of barrels of fruit, but with the great improvements in ventilation in the new swift steamers, and with this case that I advocate, losses are seldom from deterioration, and only the market fluctuations have to be contended with.

There are many things to which I should like to allude concerning the duty of growers to make the business more profitable to them as well as to those who export their fruit. I will have more to say on the subject when time will admit, but I wish now to impress growers of apples with the fact that America must be the great source of supply of apples for all continental Europe

and fifty cents a bushel is now being paid. It is stated that one hundred carloads have been shipped out of Franklin County this fall, which is a large amount for a part of the country where this crop is not made a specialty.

Selling of poultry has been in order now for some time, good prices being realized for a fine quality, alive or dressed.

Eggs are also in quick demand at thirty-two cents for largest and best. Eggs have sold well all through the season, and with the prices for these and poultry it would seem that this industry, rightly managed, should be made quite profitable.

The lateness of the season with the mild weather must have saved considerable fodder, which will be of some advantage to most farmers. But this cannot continue much longer, as December will soon be here and doubtless winter along with it.

lime and plaster increased the yield at the college and in co-operative experiments throughout Ontario. It is shown by test that it is best to plant potato sets immediately after they are cut.

A fertilizer experiment with potatoes conducted in duplicate gave the following average results: No manure 105 bushels, and two tons of poultry manure per acre 158 bushels. The use of a corrosive sublimate solution was effective in reducing the amount of scab in potatoes grown from scabby potatoes. Different methods of combating the potato beetle are reported—C. A. Zavitz, Ontario.

## Whey, Skim milk and Buttermilk.

Numerous experiments and practical work done by individual feeders have proved the great value of dairy by-products as part of the rations for fattening swine. There is practically no difference in the feeding value of skim milk, buttermilk or whey when all three are fed in prime condition, except that of course the skim milk will be richer or poorer, according to the care taken to remove the butter fat in the separator. Five pounds of skim milk per head a day is an economical allowance in fattening swine over one hundred pounds in weight when mixed grains are fed. Where corn was fed, as in Wisconsin, the best returns were secured with not more than three pounds of milk to each pound of meal. Experiments have shown that three pounds of milk to each pound of meal. Experiments have shown that one pound of mixed peas, barley and rye is equivalent to 6.65 pounds of skim milk. The protein and ash in the milk are what are needed to give strength to the bones and develop the muscles sufficiently. Whey and skim milk produce rapid and economical gains and a fine quality of bacon even when no exercise is given to the fattening stock, and counteract the tendency to softness produced by too lavish feeding of shorts. The average results of experiments at the Ontario and Wisconsin stations show that 750 pounds of whey are equal to one hundred pounds of grain.

## Care of New Trees.

When the trees come, unpack unless there is freezing weather, in which case put the box in a frost-proof building until mild weather; when the box is opened untie each bunch, shake out all packing and dip the roots in thin mud, prepared by stirring rich soil into a half-barrel of water. Then heel in; cover roots and a foot of body with soil, taking care to work soil well among roots, and tread firmly.

To winter trees North, where fall planting is considered unsafe, dig a trench two feet deep on a dry knoll, using the soil to make a sloping bank on the south side; lay in the trees with tops slanting south and bury their very tips. Tread firmly; then another layer of trees, etc., covering all deep with soil, rounded to center; no danger of cutting on too much earth. Spread trees in thin layers; untie all bunches. Dig trenches to drain off all surface water.

Plant either in fall or spring; the above plan combines all good points; trees live and grow better than if fresh dug in spring and are at hand just when wanted. The planting season is not regulated by date, nor by your season, but by condition of trees to be planted.

Prepare soil for trees at least as well as for wheat, corn or potatoes. Plant when soil will powder, not paste. Dig large holes to admit roots; never break roots, cut back rather. Cut off bruised or broken roots up to sound wood. Then dip roots in thin mud—and never let it get dry. Don't set too deep; trees after ground settles should stand same depth as in nursery—except dwarf pears, which set four inches deeper. Straighten out all roots in natural position; fill in with fine moist earth, firming it among the roots; leave no air pockets. When hole is one-quarter full, tread solidly; and so, until level full; then tread an inch of fine loose soil on top. Water only in case soil is dust-dry—pouring in five gallons when hole is two-thirds full; after fully absorbed finish filling.

Prune fall-set trees the next February or March before the buds swell; prune spring-set trees soon as planted. Cut out entire all weak, broken or bruised limbs, keeping proper balance; then shorten remaining shoots to three or four buds at base. Don't shorten cherry; give well-drained soil. Peach, cut off all limbs, leaving a stick—which cut back eighteen to twenty-four inches from ground (also one-year apple, pear, etc.). Head a tree right (low heads best), then heavy pruning will never be needed. Paint cuts over one-half inch diameter with red lead and boiled linseed oil. Take the labels off, or wires will cut into and ruin growing trees. Cultivate deeply first year to keep soil loose, moist; after that plow deep in spring and cultivate lightly after each rain and as often as weeds start. Clean cultivation pays.—Stark Bros., Portland, N. Y.

## Among the Farmers.

Boiled oil is better than paint for the inside of the silo.—A. T. Hinman, Berkshire County, Mass.

The pig should have a clean, dry place and should be well fed with wholesome food and well cared for. The skimmed milk of a Jersey cow is worth \$10 per year to feed to pigs.—J. A. Roberts, Norway, Me.

My specialty is apple raising. So we raise few potatoes, and always aim to have them early enough to sow the potato ground in wheat. Ground should be well manured the previous season. For two years we have had no bugs. When we have them we kill them with paris green and lime. Put on dry with hand duster.—J. B. Johnston, New Wilmington, Pa.



VERMONT JERSEY FOR THE ST. LOUIS EXPOSITION.  
See descriptive article.

needed will depend upon the particular soil and field. But in this matter we need not fear to give too much food. These minerals do not easily leach out of the soil, and what is not taken by the first crop will remain for succeeding crops. In this particular we may truly say that it is the generous hand which maketh rich. As a rule, it will pay handsomely to fertilize a green manure crop with not less than five hundred pounds per acre of water-slaked lime and one hundred pounds of muriate of potash, or four hundred pounds of kainit per acre.

North Carolina. GERALD MCCARTHY.

## Bulky Food Needed.

No one would think of feeding cows grain only, without hay or corn fodder, and expect to keep healthy animals. It is just as much necessary to give hens something for "filling," and out hay and clover fill a place of importance in maintaining health in hens.

If given scratching material of hay, straw or leaves, or if the hens are allowed access to barn mows, they will get a supply of filling, but very likely will get an article of little food value. Still another danger, not only to profit but to health, is the depending upon corn for feed. Corn has its place and is needed as a heat-producing food; but to use it altogether, to the exclusion of wheat and oats, is to get unhealthy birds and a few eggs.

## Exporting Apples in Boxes.

The fact that growers are unable to obtain sufficient new or second-hand barrels to ship their apples in is beginning to be a very serious matter. Complaints come from all sections of their scarcity, and many are forced to ship their apples in bulk to New York, Boston and other markets and having them sold from \$1 to \$1.25 per 100 pounds. This is a serious loss to growers, as they could not questionably realize fully one hundred per cent. more money if they could market this fruit in some kind of a package. Instead of the direction of an inveterate, any relief in the direction of a new or second-hand barrel, there is every indication that second-hand four barrels are becoming more scarce than ever, as millers in the West are using less barrels for flour every year, as there appears to be an increase in the demand for flour in bags of different sizes over that for flour in the barrel.

I think this great scarcity of the barrel is going to result in good to growers in the end. The barrel has always been a most unsuitable package to pack such delicate

been advocating the last eight years a case of two compartments that holds exactly one-half barrel of apples. In its finished state it is 28 1/2 inches long, 13 1/2 inches wide and deep (outside measurements). The two end pieces, as well as the middle piece, should be of three-quarters of an inch wood, and the sides, bottoms and tops should consist of three pieces of wood, three-eighths of an inch wood. In putting these cases together, the idea is to leave not more than one-quarter of an inch space between the slates forming the sides, tops and bottoms, but to have them come together at the corners.

I am satisfied that we have got to come to this or some similar package for marketing our apples after this. I have experimented with this sized case long enough to believe that it will eventually be adopted. Some have advocated a bushel crate, but this for an export trade has its disadvantages in costing as much to make, and then in the matter of charges per case, as the one I advocate. Arrangements with steamship and railway companies, teamsters and all others, are that they are to treat this case, in the matter of charges, just one-half that of the barrel. This case I advocate is a little too heavy to throw, or to try to walk it on its ends in moving it, consequently it has to be carried or trucked, which insures its having more careful handling than the barrel or the smaller case.

When one looks at the intelligence shown by the Californians and the Floridians in the matter of grading and packing of their fruits, as well as the inviting packages they use, he is forced to admit the comparative lack of intelligence, or of interest on the part of growers of fruit in New England and the Middle States. No advancement whatever is discernible, as they continue in the same old ways of their grandfathers in adhering to the barrel, and with a little less honesty in the matter of packing their fruit. There are no fruit growers in the world that have such a low standard of grading fruit and using such an unsuitable package as the barrel to pack in as the apple growers of America, in the Middle and New England States of America. The Canadians are no better except that they generally use new barrels. They continue to try to market one-third to one-half of their apples that should never have left their orchards. If they could only realize this, and that they would receive from one-third to one-half more for their perfect fruit than they now do, as well as saving the cost of packages, labor, freight, cartage and other charges on this worthless portion of their shipments. When they realize this fact, and bring up their standards of quality, they will find their

after this period, for many reasons that I will explain in later communications. With the enormous yearly increase of America's production, this year or 1903 crop, will mark the maximum of prices realized for the next decade in my humble opinion, but the up-to-date orchardist will find the cultivation of apples a most profitable industry, more so than any fruit a tree gives off.

GEORGE A. COCHRANE, Apple Exporter.  
Boston, Nov. 20.

## Food and Rent.

The cost of food for the average workman's family, according to a recent bulletin of the Bureau of Labor, is \$327 per year, the families averaging from five to six persons. There is an increased expense of sixteen per cent. since 1896 on account of higher prices of food. The figures contrast interestingly with the common estimate by old-time farmers, that "food costs nothing on a farm."

The all-around farmer raises most of what his family needs to eat, and has a surplus to exchange for groceries at the country store. In successful years nearly all the actual cash received might, perhaps, be laid by for savings or to pay the mortgage. Food comes mostly without cash payment. Where cash is paid for groceries the amount would probably not exceed \$50, a sum which looks small beside the workman's payment of more than sixteen times that amount.

The contrast in payments for rent is still more striking. The farmer, of course, pays nothing for house rent. An indirect cost may be figured out on the basis of expense for taxes, repairs, insurance and the like, but these items are commonly reckoned more as a part of the necessary expense of carrying on the business. If the farmer should actually charge himself such prices as the city workman pays for food and house rent, he could figure a very pretty little income from these two items alone.

## Vermont Farm Notes.

The fine autumn weather which we have been having continued up to the middle of November. Very little rain had fallen for a long time and the supply of water was short. Nov. 17 there came a good rain, which has been followed with some snow and colder weather. More rain is still needed before winter sets in for good. The roads have been the best ever known at this season of the year—or, indeed, any other—affording an opportunity for travel or teaming, which has been well improved. The shipment of potatoes still continues,

Farmers should certainly be in readiness for it, as there has been abundance of time which has generally been well employed. During the winter months there will be some cessation of active labor on the farm, but still there will be enough to do.

Enosburgh Falls, Vt. E. B. TOWLE.

## Send Young Men.

More young men ought to attend the meetings of the State Boards of Agriculture that are held in several States at about this time of year, or a little later. These meetings are of a representative nature and afford a good chance to become acquainted with substantial men who stand for much that is best and most attractive in agriculture.

To read the reports of addresses and discussions is by no means the same thing as to be present. There is often more for a young man in a five-minutes personal talk in the hotel corridor or reception-room than in the whole session besides. There are men who attend such meetings as visitors or speakers who possess the power of thoroughly arousing and attracting those who have any natural leaning toward farm topics.

At present the mass of the visitors are too largely elderly men, who have settled somewhat into the ruts of life and are more able to influence than to be influenced themselves. Granges and farmers' clubs should send ambitious, zealous delegates who can carry back a good sample of the cream of the meetings.

## Useful Potato Tests.

This season 124 varieties of potatoes were under test at the Ontario station. The following varieties led in yield: Empire State, Molly Stark, White Elephant, Conroy, Rural New Yorker No. 2, The Daisy, Rose, New Irvinville, Uncle Sam, Salzer Earliest, New Queen and Carman No. 1.

Of twenty-one varieties grown for nine years the following led in average production: Empire State 244, Conroy 242, Rose, New Irvinville 241, Rural New Yorker No. 2, 234 and American Wonder and White Elephant each 232 bushels per acre. Empire State was found to be one of the best varieties for table use.

In selecting seed potatoes it has been found that large potatoes or large pieces of potatoes produce greater yields than either small potatoes or small pieces. The results of planting one, two and four pieces per hill, using equal weight of seed, are in favor of planting one piece, both in total yield and in percentage of marketable potatoes. Coasting potato sets by sprinkling them with



## Dairy.

## The Cheese Trade.

Secretary H. D. Gilbert has just issued his annual report for the Utica (N. Y.) Dairy Board of Trade, reviewing the dairy market for the season just ended. He says: "Notwithstanding the long drought in the spring, buyers claim that more cheese has been made this year than last, and that this is one cause of the decline in price during the latter part of the season. The fact is that the course of the market has been decidedly erratic this year."

"In 1902 the retail trade in England refused to stock up at all during the summer, as they believed that prices were too high and must come down sooner or later. This was where they made a mistake, for, instead of prices coming down, they went up, and grocers had to pay roundly in the fall and winter for goods to carry them through. The same was true also of the Southern trade in this country. Determined not to be caught in such a fix again, both English and American jobbers began stocking up this year in June. This, of course, kept prices well up in our producing districts as long as the demand continued, which was pretty well into the summer, or until the most desirable cheese of the season was ready to come forward. Late August and September stock was always wanted by the large dealers to put away as their choice surplus for winter. So prices were maintained very easily down to October. But meanwhile the unusual foreign and Southern demand had dropped off amazingly, and October stock was a drug in the market. This necessitated a come-down, and the decline would probably have been more severe if it had not been for the effect which it was feared it might have upon earlier stock already bought. Sales in 1903 were 9,880,640 pounds at Utica and 6,646,095 pounds at Little Falls. Average price for the year at Utica 10.3 cents."

"In addition to the regular market there have been 42,235 boxes sold on the curb. These have easily averaged .1050 per pound instead of .1030, which is the average of regular sales. At this price the value of curb cheese amounts to \$243,907.12; add value of regular sales—\$1,017,705.92, making a total of \$1,261,613.04, or considerably over a million and a quarter dollars. This is \$34,467 more than the total of last year, when curb sales were included also."

"The total value of cheese sold at the two markets this year is \$1,902,142.31, including the curb cheese sold at Utica, which is \$278.69 less than last year, owing to the considerable decrease at Little Falls. There was no butter quoted at the Falls, but including that which was quoted at Utica it would easily bring the transactions of the two markets up to \$2,000,000."

## On the whole it can be safely said that cheese-making in central New York is holding its own, in spite of the large amounts of milk sent to New York by rail and that which has been absorbed by condensaries.

## New York is pre-eminently the cheese-making State of the Union, and, as such, it has taken 11,338 tons more from view than she did last year. With the rapid growth of the home trade it would seem as if the future of this industry was as well assured as it reasonably could be, for a few years to come at any rate. There probably will not be much increase in the make, while the increase in population goes steadily on."

## Winter Feeding for Growth or Milk.

The summer has passed and winter is upon us. The all-important question for the farmer to now consider is, How can I feed my animals so that they will yield the best returns in growth, flesh or milk, at the least cost? The question should not be, How little can I feed and still keep up animal life, but what and how much shall I feed to get the best returns and at the same time keep the animals in perfect health? Health in the dairy cow is the first, both in the care and feed. We may get health without profit, but we cannot get profit without health. Low vitality means poor digestion, which in turn means loss in food consumed. If this is true, anything that tends towards better health means more profit, and is certainly desirable.

Nothing is cheaper or more beneficial in this line than pure air, sunlight and exercise. This is not only true with the growing animals, but with the fattening animals and the dairy herd. I fully realize that while all will agree with me in the assertion that exercise is necessary for the growing animal, some will emphatically deny that any exercise is needed for the fattening animal or the dairy cow. Why is it that God's law that requires motion to keep pure the air we breathe and the water we drink and to give health and vigor to all life, should stop short when it comes to the dairy cow? I cannot help but feel that the practice of constant and long-continued confinement must result in a tendency to fatten later. If it is not noticeable in the animal itself, it will crop out in her offspring later on. Any practice that tends to lower vitality in the generation to follow is certainly open to criticism.

In regard to kind of feed, the feeder should ask himself what is desired, milk, growth or flesh, and feed accordingly. A good rule for the inexperienced feeder to follow is that the same feeds that produce a good flow of milk in the dairy cow and at the same time keep her up in flesh and vigor will, when fed to the growing animal, give excellent returns in growth. On the other hand, a feed that has a tendency to fatten the dairy cow and lessen the flow of milk would not be a desirable feed for the animal that was not being finished for the market. It pays to fatten an animal only once, and that is when it is to be put on the market. Excessive fat is a positive injury to the growing animal or the dairy cow. As much depends on the way feed is fed, when profit is considered, as the feed itself. Punctuality in feeding is a very important factor. There are many feeds that are not particularly palatable to farm animals, although they are nutritious. These feeds should be fed when the animals are hungry and will then be eaten with a relish, when if these same feeds were fed when the animals' appetite was partially satisfied, they would be rejected and become a total loss. By using tact, and feeding the poorer feeds in small quantities first, and those that are more palatable later, a great saving can be made.

The nearer that the feeder can feed up to the full capacity of his animals the more profit will be realized. A little fuel will keep the engine running; but it is only when more fuel is added that the machinery can be belted on and the engine run with profit. This is equally true in feeding farm animals. There is no money made in simply keeping up life. It is the food that is fed over and above a maintenance ration that gives us our profit.

Plenty of fresh water is as important as the feed when profits are to be realized. I

do not believe that water should be warmed except in cold weather, and then only to bring it to the same temperature as when freshly drawn. Lukewarm water is distasteful to man, and why not to our farm animals?

In short, feed to the full capacity of the animal such feeds as are calculated to produce the results sought for, give plenty of fresh, pure water, give them sufficient exercise to keep them in full vigor and give them at all times that which counts the feeder the least and which often counts for most, pure air and sunshine, and then you are certain to reap a profit from your year's labor and have the satisfaction that you are engaged in the noblest calling on earth—successful farming.—Forest Henry, Dover, Me.

## Agricultural.

## Corn a Good Crop.

Eastern growers will have some difficulty in realizing that the country's corn crop is actually beyond the average in quantity, notwithstanding its approach to a failure in some localities. In the prairie corn belt, which produces the bulk of the commercial crop, the yield was large.

Preliminary returns to the chief of the Bureau of Statistics of the Department of Agriculture on the production of corn in 1903 indicate a total yield of about 2,313,000,000 bushels, or an average yield of 25.8 bushels an acre, as compared with an average yield of 26.8 bushels one year ago, 16.7 bushels in 1901 and a ten-year average of 23.9 bushels. The general average as to quality is 83.1 per cent., as compared with 80.7 last year, 73.7 in 1901, and 85.5 in 1900. It is estimated that 5.3 per cent. of the corn crop of 1903 was still in the hands of farmers on the first. The preliminary estimate of the average yield an acre of buckwheat is 17.7 bushels, against an average yield an acre of 18.1 bushels in 1902. The average for quality is 94.4 per cent., against 88.1 last year, 93.3 in 1901, and 90.2 in 1900.

The preliminary estimate of the average yield an acre of potatoes is 84.7 bushels, against an average yield of 96.0 bushels in 1902. The average to quality is 86.4 per cent.

## New Hampshire Pine and Spruce.

The abandoned fields and pastures lie for the most part, south of the White Mountains and contain much promising pine and spruce growth. One may find well-made stone walls in woods fifty years old, indicating that the land was once tilled; and choked and dying apple orchards in the woods are not infrequent. So much abandoned land would make a bad showing for New Hampshire were it not for the fact that through intensive cultivation, farm values have increased by eight million dollars during the last decade. Thirty-seven per cent. of the land area, chiefly non-agricultural, has never been taken up in farms. This with the unimproved farm land makes a total of more than seventy per cent. of the land area under some form of forest cover. A portion of it is, however, brush and not the land. The chief difficulty from a silvicultural point of view is that nature's seeding has been in most places irregular.

As the pastures grow up to pines, a few trees appear first, getting the start of the others, becoming limby and less profitable for lumber, and interfering with the growth of the trees that come later. It is estimated that the on-coming pine forests will utilize not more than sixty per cent. of nature's forest and soil capacity, while some of it will utilize only thirty per cent. The problem is to develop this growing forest so that it will utilize the full capacity of the soil, by planting in the fall places; thinning when necessary, re-foresting the cut-over areas, and extending the forest area over land not profitable for agricultural crops. Numerous experiments in sowing seeds of white pine and transplanting young trees have been made in New Hampshire. The chief one of sowing seed was made by a gentleman in the town of Winchester, who sowed 210 acres, taking advantage of a good seed year and collecting seed himself, and sowing about a quart to the acre. Experiments have been tried with fair success in transplanting natural seedlings two to ten years old. The best results are seen in Westmoreland, Moultonborough and Bedford, but none of them are on an extensive scale. Of groves thinned and pruned there are interesting examples throughout the pine region of the State, but the practice is not at all general. The great need is definite, practical instruction attractively presented, in agricultural and other meetings. The Society for the Protection of New Hampshire Forests provides addresses with lantern photographs freely throughout the State. There is need also of a demonstration forest, conveniently located for showing results in management.

Taken as a whole, there is an extensive and very valuable second growth of white pine in the State. In this respect New Hampshire differs from the Western pine State, where the new growth is less vigorous and rapid. Besides, the soil in large portions of New Hampshire is better adapted to forest than to agriculture. The State promises to be a timber-producing State in years to come. Much more profit, however, can be secured by improved management, and the forest area can be profitably extended.—Philip W. Ayres, Concord, N. H.

## Produce Notes.

It is estimated that Nova Scotia will have 350,000 barrels of apples for export out of the 1903 crop, in addition to the 155,000 barrels already sent over.

Wheat harvest begins in the northern province of Argentina in November, and, moving southward, usually continues well into February. The crop is very large.

The Bulgarian wheat crop is reported as about sixty per cent. larger than the crop of last year.

The hay situation shows nothing new, prices having quieted on a settled tone and demand being quiet.

It is expected that apple exports from Boston will largely increase as soon as navigation closes for the winter at Montreal.

The Canadian government report says: Potatoes seem to have yielded an abundant crop everywhere, a little smaller west of Montreal and east of Quebec. Unfortunately, rot has appeared and will, perhaps, reduce the crop by from twenty-five to thirty per cent.

Many of the large New England older mills have been paying twenty cents a bushel for apples.

## Food Cost of Nations.

Statistics have been collected to show that the measure of the prosperity of a country is the amount of food consumed by its inhabitants—in other words, that diet and commerce go hand in hand. The countries which consume the largest amount of food and drink per capita are the countries which have the largest surplus

for export to other lands; the countries which are abstemious or moderate in their consumption of food and drink have little surplus to send away.

The average cost of food per capita in the United States is sixty cents a day; in the United States stands at the head of 'exporting' countries with an average of \$1,250,000,000 in a year.

The average consumption of food and drink in England is fifty cents per capita, and England stands second on the list of exporting countries. Germany is the third with an export trade of more than \$1,000,000,000, and forty-five cents a day the average per capita spent for food and drink (beer included).

France has an export trade of \$900,000,000 a year and the average expense to each inhabitant for food and drink is forty cents

sent Mr. Van Dyke's vague and slightly fanciful. The frontispiece, for example, is one of the best examples of his efforts to catch the elusive characters which the author has none too clearly outlined. There we have the thoughtful angler standing with rod in hand near the base of a cataract, where, according to the legend below, "the noise of the falls makes constant music." Almost surrounding the angler are rather indistinct female figures bearing traditional musical instruments. These illustrations which Mr. Du Mond has so happily conceived are reproduced in half-tone and printed in tint.

Of the text itself readers will recall the opening essay wherein the author points out the companionship to be found in a river, "for real companionship and friendship there is nothing outside of (the animal

pristinely illustrated by Katharine Pyle. (Boston: Little, Brown & Co. Price, \$1.25 net.)

Here are eight stories of adventure as absorbing as the romances of D'Artagnan, with a hero almost as diverting as any of Dumas' creations. Dr. Conan Doyle's Brigadier Gerard of Napoleon's army is a capital narrator, and we read his various extraordinary exploits with wonder and amazement. Gerard is only a boastful, blustering, swashbuckling old soldier, and his heroics deeds are those which no single man ever performed, but we enjoy his exciting and amusing yarns, and marvel at the skill and ingenuity with which the creator of "Sherlock Holmes" has entered into the spirit of the French romanticist. The old brigadier is talking to an eager, expectant company in the cafe. First he tells us how, when a colonel of the Hussars of Conflans, he lost a part of his ear. This unfortunate encounter occurred when the French were holding the city of Venice—a city laid out without any regard for cavalry maneuvers, as the brigadier says. It seems that in following out his usual custom of making love to some fair dame in every new place where he was stationed, Gerard came to the rescue of Lucia—Lucia was her first name, and her second—but a gentleman forgets a second name. By preventing the French looters from taking away valuable pictures from the elegant home of Lucia he won her undying gratitude and her heart. One night on his return from the theatre he found a note, apparently from Lucia, and a gondola waiting him. She prayed for him to come to her at once as she was in trouble. Unsuspecting he went. The big gondolier overpowered him and thrust a sack over his head, "I cannot tell you the humiliation and also the fury which filled my mind as I lay there like a helpless sheep being carried to the butcher's." I, Etienne Gerard, the champion of the six brigades of light cavalry, and the first swordsman in the Grand Army to be overpowered by a single unarmed man in this fashion," the brigadier laments. He was taken to a prison, where after undergoing various experiences he was thrust in a cell. Making his way through the wall to the adjoining cell he discovered the fair Lucia, incarcerated there for having loved a Frenchman. She was about to have her ear cut off as further punishment for this offense, and, well, Gerard exchanged places with her in the dark and permitted his own ear to be sacrificed.

This is a typical story, but it is the manner of telling as much as the story itself which delights the reader. We have next the remarkable capture of Saragossa, but the redoubtable brigadier. Then follows an amusing story, "How the Brigadier Slew the Fox." Other remarkable adventures include the saving of the army of Massena in Spain, and his most extraordinary rescue of the emperor from capture after the battle of Waterloo, an event which history has somehow failed to make note of. If you start in to read one of these adventures you will finish the book at one sitting. (New York: McClure, Phillips & Co. Price, \$1.50.)

## Curious Facts.

A remarkably fine diamond has been found in a meteorite which recently fell in Diablo Canon near Crater Mountain, Arizona. The meteorite itself was much broken by contact with the rocky ground upon which it fell, and the diamond was found firmly embedded in one of the fragments. It is now in the American Museum of Natural History.

A Milo (Me.) taxidermist has secured a black woodchuck and wonders if another of that kind has ever before been found in Maine.

The executive office of the United States calls for only \$112,000 a year, while England gives the royal family \$4,000,000.

In Cuba, sixteen tons of cane yield one ton of syrup; in Peru it requires only 12.

It is not generally known that in many parts of the world clay is eaten on bread as a substitute for butter. This is termed "stone butter," and is used in many parts of Germany. In northern parts of Sweden earth is often baked in bread, and is sold in the public markets on the Italian peninsula, as well as on the island of Sardinia, Persia, Nubia and other tropical countries. Health says this practice probably had its origin in the knowledge that all earths have some kind of flavor, and take the place of salt, a necessary ingredient in all kinds of food.

A Frenchman of science has just communicated an interesting case of the apparent anomaly of ice formation by the sun's heat. It appears that the peasants of Pongbaud, in the mountains of Auvergne, are acquainted with a singular summer formation of ice, presumably due to evaporation of underground moisture and consequent fall in temperature. Of this phenomenon they have for many years taken advantage to cool and harden their cheeses, which are deposited in certain caverns where this ice is found to be present, and thus keep good during the hottest summer months.

The Trans-Siberian Railway gives the cheapest rates in the world. It is possible to buy an emigrant's ticket, covering six thousand miles, nearly three weeks' journey, for about \$3.

On the Mangalak peninsula, in the Caspian Sea, there are five small lakes. One of them is covered with salt crystals strong enough to allow a man and beast to cross the lake on foot; another is as round as any circle and a lovely rose color. Its banks of salt crystal form a setting, white as the driven snow, to the water, which not only shows all the colors from violet to rosy red, but from which rises a perfume as of violets. Both the perfume and the color are the result of the presence of seaweeds, the violet and the pink.

An ancient Chinese tomb of the Han Dynasty, B. C. 220, was recently opened and found to contain a bronze mirror decorated with raised animal figures. These figures, which were of an astrological character, represented the twenty-eight mansions or constellations of the moon, and although the signs were nearly decayed, the serpent coiled around the foot of the mirror was distinctly visible. In addition to the mirror, some small red glazed bowls were found of considerable beauty and finish, and bearing a glaze of great smoothness and uniformity of coloring.

The greatest Siberian fur market is at Irkut, 150 miles east of the Ural Mountains, where an annual fair is held. At the fair for this year the highest prices prevailed, largely due, it was said, to the whole world having adopted the American fashion of wearing furs on the outside instead of for linings, thus requiring better qualities. The blue fox is getting scarce, and a single skin commanding about \$200. White fox skins bring \$60. Undressed sable skins sell for from \$15 to \$200 and between fifty and one hundred such skins are required to make a jacket. Siberian furs include the skins of bears, gluttons, lynxes, elks, reindeer, stags, musk-deer, blue, silver and red foxes, sables, martens, minks, ermines, polecats, squirrels, wolves and wildcats.

Prof. Hans Molisch of Prague, has reported to the Vienna Academy of Sciences the discovery of a lamp lighted by means of bacteria, which he claims will give a powerful light, and be free from danger, thus being valuable for work in mines and power magazines. The lamp consists of a glass jar, in which a lining of saltpetre and gelatine, inoculated with bacteria, is placed. Two days after inoculation the jar becomes illuminated with a wonderful bluish-green light caused by the innumerable bacteria which have developed in the time. The light will burn brilliantly for from two to three weeks afterwards, diminishing in brightness. It renders faces recognizable at a distance of two yards and large type is easily legible by it. Professor Molisch asserts that the lamp yields a cold light which is entirely safe.

## HOLSTEIN-FRIESIAN ASSOCIATION OF AMERICA.

President, Henry Stevens; Secretary, F. L. Houghton, Putney, Vt.; Superintendent of Advances, Regis, 17, S. Hoist, Yorkville, N. Y.

**MEMBERSHIP.**  
To Members—Males, \$2; females, \$1. Double fees for animals over one year of age. Transfers, if made within 6 months of date of sale, 25 cents each. New Members—Males, \$5; females, \$2.50. Transfers, if made within 6 months of date of sale, 25 cents each. All blanks furnished free.

**Life Membership, \$35.**  
Advanced Register in charge of Supt. Houghton, above, who will furnish all information and blanks therefor.  
Address F. L. HOUGHTON, Putney, Vt., for information relating to Registration of Pedigrees.

## Ayrshire Breeders' Association.

President—George H. Yeaton, Dover, N. H.  
Secretary—C. M. Winslow, Brandon, Vt.  
Treasurer—Nicholas S. Winsor, Greenville, R. I.  
Blanks for Registering and Transferring Ayrshire Cattle furnished free.  
The Year-Book for 1903 furnished free.  
Private Herd Registers for Seventy-five cows, \$1.50; postpaid. For twenty-five cows, \$1.00; postpaid. Good for 34 cows, price, \$1.50 per 100; for 100 cows, \$4.50. For 250 cows, \$10.00. For 500 cows, \$18.00. For 1000 cows, \$32.00. All the above may be obtained from the Secretary.  
Fees for Registering—To non-members, \$2 each; male or female. To members of the Club, \$1 each; male or female. For registration of all animals over two years old. Transfers, 25 cents each; duplicate certificates of either entry or transfer, 25 cents each. Double the above amounts in each case to Non-Members.  
Herd Books, Volume 1 to 14, may be obtained from the Treasurer—\$2.50 each, postage paid.

## American Jersey Cattle Club.

OFFICES—4 W. 17TH ST., NEW YORK.

President—Elmer A. Darling.  
Secretary—J. J. Hemmingsway.

Blanks for Registering and Transferring Jersey Cattle, also Blanks for Private Butcher Tests of Registered Jersey Cows, furnished free of charge upon application to the Secretary.  
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Herd Books, Volume 1 to 14, may be obtained from the Treasurer—\$2.50 each, postage paid.

## BROOKSIDE HERD.

## HOLSTEIN-FRIESIANS.

To reduce herd to capacity of pasture, will sell a limited number of Ayrshire and Jersey cows.

## YOUNG COWS.

of high breeding and individually right, large producers, at \$100 and \$125 each.  
Also 15 BULL CALVES at bargain prices.  
STEVENS BROTHERS, LACONA, N. Y.

## The ONTARIO VETERINARY COLLEGE, Limited.

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Affiliated with the University of Toronto.  
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THE GOLDEN FLEET—AMERICAN SHROPSHIRE REGISTRY ASSOCIATION.  
The Largest Live Stock Association in the World.

Sixteen vols. of the Shropshire Record. The only Shropshire Record recognized by the United States Government and Dominion of Canada to pass Customs. Registered Shropshires are the most valuable Sheep in the Universe. Blanks free.  
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## ELMWOOD.

## Home of Lella Pieterje.

25 lbs. 2 oz. butter in 1 day. A. R. O. Sons, two daughters and many others, closely related to this great cow. A. J. animal in herd for sale.  
E. D. T. McNeill, Theresa, N. Y.

## DEVONS.

For want of stabling I offer, at very low prices, my First-Prize year-old Bull and a number of Females of various ages. Or, I will sell my entire Show Herd to any single purchaser.  
JAMES HILTON, Singersland, N. Y.

## HOLSTEIN BULL CALVES.

One Thoroughbred, four High Grades, 3 to 5 months old, all handsome, healthy and well bred. For sale at moderate prices.  
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F. H. HAZARD, Owner.  
A few choice Young Bulls and Bull Calves for Sale of the Florida and Florida Cattle Co. For more particulars apply to the Florida Cattle Co. at the New York State Fair, 1904 and 1905. For information write to:  
GEORGE T. HUBBLE, Manager, Solway, N. Y.

## Woodlawn Herd Aberdeen-Angus Cows.

Heifers and young bulls for sale. Also Duroc-Jersey and Chester White calves for sale.  
BENTON GARINGER, Washington C. H., Ohio.

## Maple View Herd.

Aberdeen-Angus Cattle—45 registered bulls and heifers for sale, sire of Ford and 322.  
JOHN L. GAISER, Charleston, Ill.

R. Lillburn, Emerald Grove, Wis., breeder of the best strains of Aberdeen-Angus cattle. Established 1892. Also registered Shetland ponies.

## Champion Herd, 1900, 1901, 1902.

Of up-to-date prize-winning Chester Whites. This herd won more prizes in 1900, 1901 and 1902 than any other herd in the world. If you want stock from this herd write to:  
W. DORSEY & SONS, Perry, Ill.

## Chester Whites.

Buy your stock from the old reliable herd that has produced more prize-winners in the past 15 years than any other herd in the United States.  
M. & NEWBURN, Hennessee, Ill.

## 30-Chester White Bears—50.

Eight fall of 1902 farrow, 42 of spring of 1903 farrow. Heavy bone, extra quality. Breeds with most favorable. Pairs and trios not skin. Also some extra yearling Shropshire ram lambs.  
A. E. ECKSTEIN & BRO., Chester, Howard Co., Ia.

## Chester Whites.

A fine lot of March pigs. Pairs and trios not skin. Write to:  
W. D. HOWLAND, R. F. D. No. 1, Sedick, Ill.

## Write for show record of our

## Chester Whites.

Describe what you want.  
HARTMAN BROS., Box P 168, Lima, O.

## Chester White Hogs.

Fall and spring pigs, either sex, from leading prize-winning herd.  
MARTIN VOGEL, Jr., Route 4, Fremont, O.

## Chester Whites for Sale.

Best of breeding; all sows; extra large but smooth; weight 200 pounds at six months.  
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## Poland-Chinas.

Twenty early spring hogs; large, mellow fellows; also one hard boar and fifty August pigs. Customers in eleven States.  
CLYDE CARRINGTON, Jamaica, Ill.

## Pineau View Herd.

Registered Poland-Chinas, both sexes, for sale; guaranteed as represented.  
C. A. BROWNE, Belle Plaine, Wis.

## 30 Big-Boned Poland-China Bears.

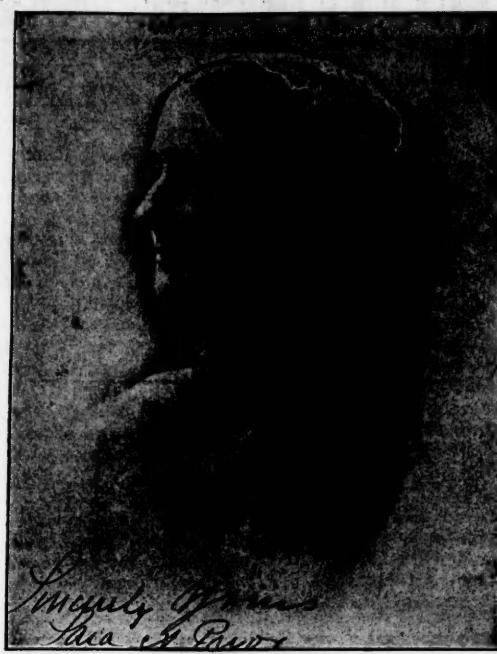
March and April farrow, 22 each.  
W. M. LAMMING, West Liberty, Ia.

## Clydeville Horses.

Poland-China hogs, Barred Plymouth Rock chickens.  
PHILIP A. MAUTZ, R. R. No. 5, Pans, Ill.

## Polled Durhams.

Both sexes, for sale cheap. Also Poland-China hogs.  
R. B. GUY, Mechanicsburg, O.



MRS. PRYOR.

Author of "The Mother of Washington and Her Times."

Published by The Macmillan Co., New York.

a day. Russia, with an export trade of \$375,000,000, expends twenty cents a day on food and drink per capita, and Italy with \$275,000,000 of annual exports, spends eighteen cents a day in macaroni, wine and other articles of diet.

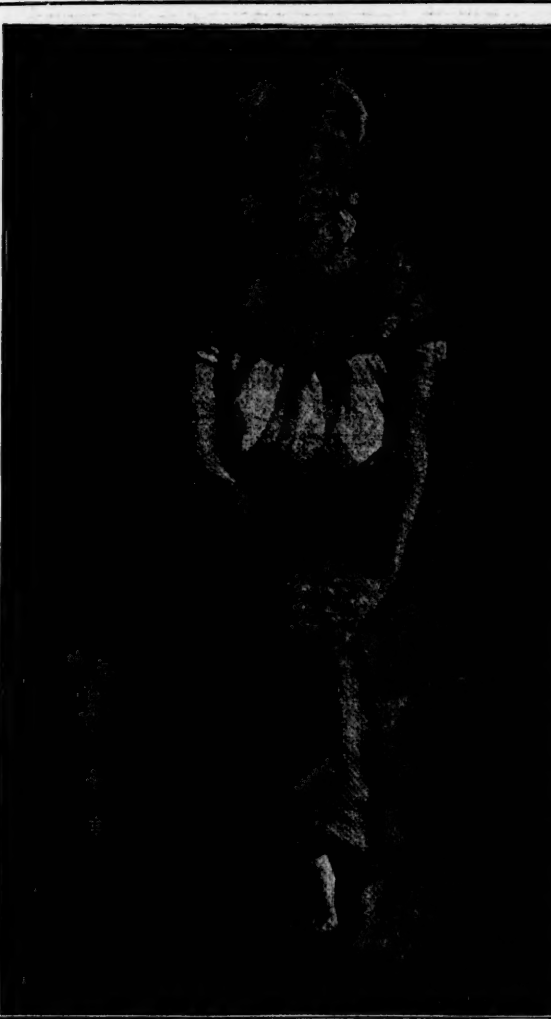
All of which convinces statisticians who have unearthed this notion of the relation of productivity to diet that "three meals a day for each inhabitant" is the open door to world power in commerce, manufactures and the surplus products of a fertile soil.

## Literature.

Mrs. Roger A. Pryor's book has peculiar historic value because it gives for the first time the true story of George Washington's life. The origin of George Washington's name is also set forth, and so are many related facts hitherto unknown. But the most attractive portions of the book are its pictures of Virginia social life throughout the eighteenth century, which are new, inasmuch as they portray the manners and usages of the region in which Mary Washington lived, not the familiar ones of tide-

kingdom that is comparable to a river," to quote the author's exact words. He considers mountain-worship and tree-worship, but "every river that flows is good," he says, "and has something worthy to be loved. But those that we love most are always the ones we have known best,—the stream that ran before our father's door, the current on which we ventured our first boat or cast our first fly, the brook on whose bank we picked the twinflower of young love." And so he takes the reader into his confidence, and in a most charming manner convinces him that after all rivers are entitled to our reciprocal friendship. But this chapter is but the gateway to a series of essays so redolent with nature and so exquisitely conceived and so simply written that we marvel at the author's subtle imagination and lightness of touch. New York: Charles Scribner's Sons. Price, \$1.50.

Present-day writers of fairy tales have no easy task in their endeavors to absorb and delight the child mind after the manner of Grimm. Nevertheless, the high standard which has been set for them deters no in-

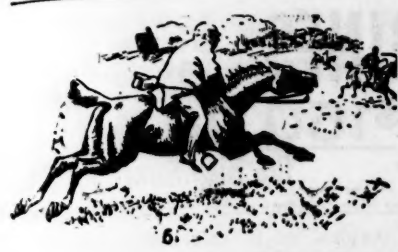


FROM "BUDAPEST, THE CITY OF THE MAGYARS."

Published by James Pott & Co.

water Virginia. For years the study of Mary Washington and her times has been a labor of love with Mrs. Pryor, who has gotten the spirit out of countless books and documents and packages of old letters, and who writes less like a historian than like an eyewitness. Through this rare identification of herself with her subject, she has verily made the dry bones live. History in her hands becomes warmed into contemporary chronicle. Looking through her eyes, the reader takes the same interest in the functions and fashions of those far-off years and in the "dear, dead women" who adorned them, as





## CHARACTER ON HORSEBACK

Many a peculiar sight one sees on horseback. Did it ever occur to you that a horse in this condition becomes very much overburdened. The saddle with its weight rubs the back. Under the bridle and straps are little sores and chafed spots. Soothe and refresh by the use of Gossamer. Article of great value in a stable.

G. N. CRITTENTON CO.,  
15 Fulton St., New York.

## Poultry.

### A Great Poultry Future.

Today the poultry business is the greatest little business on earth, and the poultry press is proclaiming the fact to an astonished people. Poultry breeders as a class are enthusiastic and ambitious, and they are supporting the poultry press with all the means they possess. With our shows enlarging in number each season and the profits in poultry culture increasing year by year, the poultry press has a great future before it.

But poultry journals of the future will not be amateurish attempts. They will be the best possible combination of the poultryman's learning and the printer's skill. The day of so many small poultry journals is past. People want the best, and while there will ever be room for more journals, they will necessarily have to be of a high standard to merit the breeder's support. The day is soon coming when every man, woman and child who raises poultry will eagerly devour every fragment of information they can secure that will enable them to make an extra dollar from their fowls. With the bin packers raising the cry for "Better poultry, and more of it," the poultry business will soon assume proportions that now seem almost impossible, and judging from past experience, it may be reasonably supposed that the poultry press will keep fully abreast with the advance of the industry.—George W. Gillies, Topeka, Kan.

### Poultry Higher.

Special poultry letter by S. L. Burr & Co.: As we predicted in our previous letter to you, dealers had a remarkable sale on poultry for the Thanksgiving trade. It was evident that we were to have a short crop of turkeys, and what was anticipated has been realized. Everything has cleaned up as fast as it has arrived, and the prices prevailing have been such as to favor the shipper from the opening of the trade the middle of last week up to the present writing. This not only applies to turkeys, but to all kinds of poultry.

Turkeys have ranged for New England shippers, in a wholesale way, from 20 cents up above 30 cents, just according to the quality of the goods; this certainly is quite unusual; chickens also have been short for the last four or five days, anything fancy selling at 20 to 22 cents; fowls from 15 to 16 cents, and in some few instances as high as 17 cents; fancy geese have been extremely short and prices have ranged all the way from 17 to 20 cents; ducks also are very short and prices from 15 to 20 cents. You will readily see that we have had a very satisfactory sale, and it will leave our market thoroughly cleaned up of all of its arrivals, and in addition to that a great many thousand packages of stock in the freezer have been taken out and disposed of, leaving the market in the very best possible condition. While we do not anticipate the extreme prices prevailing during the holiday is over, yet we see no reason to modify the quotations very much for some time after Thanksgiving, and we look for light receipts and firm prices. The supplies from the West while they have been large, are taken as fast as they arrive; turkeys on the basis of 21 to 24 cents, chickens from 13 to 17 cents, fowls from 13 to 14 cents, ducks 16 to 18 cents and geese the same. We look for moderate receipts and a continued strong market on all kinds of poultry.

Poultry men give a very definite reason for the dearth of turkey this year, in the great prevalence of cold, rainy weather, when the turkey chicks were growing late spring and early summer. The turkey is a delicate bird, and even the adults of the race demand warmth and dryness to do their best. These weather conditions have prevailed pretty well over the whole country, so that one section is not able to supply the deficiencies of the others. The birds are relatively scarce everywhere, and, as a consequence, the price is high. Many turkey growers believe the stock of turkeys will be reduced so low, by reason of the good prices offered, that there will be even greater scarcity for Christmas markets. Last year such was the fact, and this year the situation is much the same, apparently. In case of a glut, Christmas, there is usually a good demand for turkeys in January and February. Last year the January prices were higher than at Christmas. Those who have leaved or immature turkeys will do well to hold them and finish them properly for market next month or later.

### Eggs Very Scarce and High.

Prices range considerably above the high rates last quoted. Fancy lines are very scarce and all grades sell at high prices, although the cost has checked buying to a great degree.

Eggs are very high in New York market. The arrivals of fresh-gathered stock continue light, and while some of the advices indicate a slight increase in the stock coming this way, the supply is still barely sufficient for current needs of the highest quality. The consumption, however, is being reduced by the extreme prices ruling, and receivers are not disposed to crowd prices higher until the effects of the advance are more clearly demonstrated. Prices held firm at the advance quoted. Refrigerator eggs are in moderate remaining supply, and choice qualities are sparingly offered. Prices still tend in sellers' favor, which means that the tendency has been upward rather than down. There is small prospect of lower prices until Southern stock begins to arrive about the last of December or first of January. Before then the price may possibly go higher.

Such a thing is not unheard of. In January, 1881, fresh eggs sold at one time for 65 cents a dozen, or \$19.50 a case. This was at a time when receipts were kept out by severe storms. At this time of year the market for all grades of eggs was never

better. Stock in cold storage will show large profits. Even lined eggs bring a good margin over cost. The market for fresh eggs is 6 to 8 cents higher than for the corresponding time last year.

### Bee Jottings.

Italian bees are the best workers, and they are also the worst robbers, if once they ever make a commencement in robbery. It is estimated that to equal one pound of honey from clover, sixty-two thousand heads of clover must be deprived of nectar, and 3,500,000 visits from bees must be made.

The "worst" thing you can do with your honey is to send it to a commission merchant who has no trade for it, and will sacrifice the honey just to get rid of it. A Swiss bee journal asserts that a colony having eleven frames of brood increased in weight from May 2 to May 6 thirty-three pounds; another of nine frames increased only half as much.

It is well to introduce an Italian queen in all cross-bred colonies after the second year, or requeen an apiary with Italians every third or fourth year, if black bees are plenty in the vicinity.

A Belgian bee writer says that a number of drones and workers freshly killed were laid at the entrance of a hive at night. Nightingales came and ate the drones, but did not touch the workers. Is it not possible that some other birds make the same distinction?

Prof. G. DeBunge, a German scientist, says that, among the hydrates of carbon which serve as food, honey holds an exceptional place. Of all the sugary matters, honey is the only one containing iron, and, strangely enough, almost exactly in the same proportion as is found in white bread.

## Horticultural.

### Foreign Fruit Markets.

Cable advices Nov. 23 to G. A. Cochrane from the foreign apple markets report prices a turn easier on anything but strictly fancy fruit. They have had rather heavy arrivals, but they are clearing up very well on all good landed parcels. For strictly fancy fruit, nets continue to come from \$2.25 to \$2.75 here in Boston for Baldwins, Greenings, Northern Spies, Ben Davis; in fact, most all of the red sorts are netting these prices. Occasionally, very fancy high-colored Baldwins and Kings net more money. He has just received returns for a good round line of Baldwins in the half-barrel case that show a net of \$1.50 per case here in Boston. Mail advices to hand Wednesday speak of the large demand for apples, but advise American apples to be sent forward at once, because there is a large crop of Valencia oranges, and with the advent of the Tasmanian apples at the turn of the year, the probabilities are American apples will not do so well as they are doing now.

James Boyle, United States Consul at Liverpool, writes: "On the whole, the condition and quality of the fruit from the United States is satisfactory, but there were instances where the packing was very bad—in fact, some in the trade describe it as dishonest packing, a few large apples being put on the top and at the bottom of each barrel, and in the centre of the barrel all sorts of rubbishy apples were placed. If packers will be more particular in grading and packing, greater confidence will exist here with buyers and the result will be better prices. Great satisfaction is expressed at the result of the action taken by the Canadian government to prevent fraudulent packing, for by it irresponsible shippers are prevented from operating. The total import of apples into the United Kingdom for last season (1902-3) was 2,508,193 barrels, of which 1,870,719 barrels came from the United States and 637,474 barrels from Canada. Large shipments of apples have come in from Canada. Canadian apples have been quick to arrive themselves shippers have been quick to arrive themselves the failure of the fruit crop generally, and particularly the apple crop, in England. A great many plums arrived in England this summer from Germany, but there were many complaints as to their quality. Spain is getting to be a great source of supply for fruit consumed in England."

American apple exports this season are almost two million barrels, the largest quantity ever known, and there seems to be no cessation in the demand. Short crops in England and all over Europe are responsible for the unusual demand. Exporters say that nothing in their advice indicates any reduction in demand, and they are arranging to handle quite as many apples in the next few weeks as they have during the past month. During last week just closed enormous quantities went across. According to statistics compiled by W. M. French, one of the largest apple exporters in the world, the figures were: From New York, 60,945 barrels; Boston, 67,077 barrels; Montreal, 73,092 barrels; Portland, Me., 10,483 barrels, and Halifax, N. S., 19,500 barrels. Of this quantity Liverpool took 113,332 barrels; London, 46,443 barrels; Glasgow, 28,109 barrels; Hamburg, 20,962 barrels; Antwerp, 5326 barrels; Bremen, 633 barrels; Antwerp, 1161 barrels; Paris, 316 barrels; Copenhagen, 200 barrels; Bristol, 8877 barrels, and Manchester, 7788 barrels, a total of 231,097 barrels, the largest week's business in the history of the export trade.

### Apple Markets Slightly Weaker.

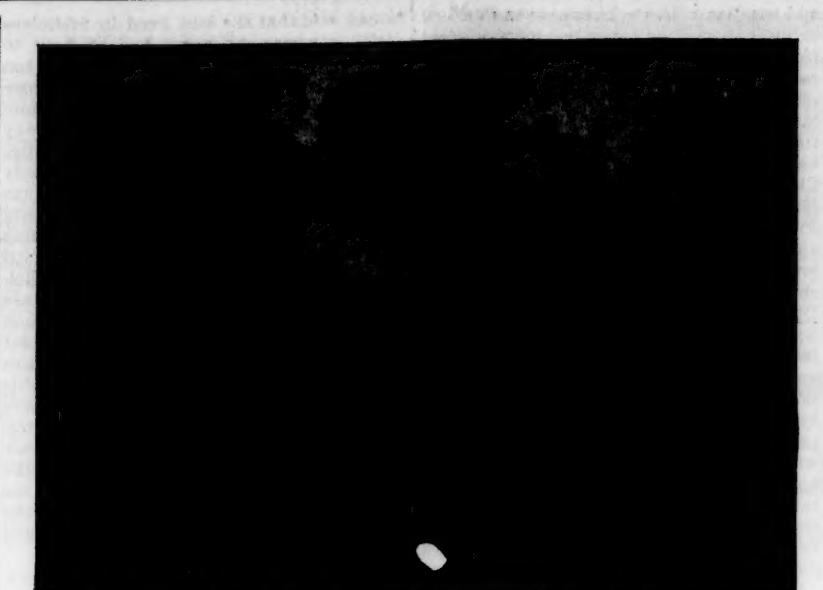
The supply of apples has continued liberal, and there is still too much fruit which has of second-rate and low prices. Good lots, especially such as are suitable for export, have held fair prices. Just now there is a slightly weaker feeling on account of a somewhat easier tone in the foreign markets. Some holders feeling a little uncertain of the future course of prices have been willing to shade prices a trifle to close out.

At New York apples are in heavy supply and demand moderate, but desirable grades are held with confidence at full former prices. Some very high-grade fruit, especially varieties suitable for table use, slightly exceed highest quotations.

### Grain Tending Upward.

The grain market, especially wheat, has been strong, with quotations averaging somewhat higher. The cause assigned is the fact of small receipts at leading Western centers. Exporters continue to hold off, but the situation is dominated by conditions, and the country and prices are going up in the face of a quiet export demand. It is the fact that winter-wheat mills in Pennsylvania and Ohio are unable to get wheat and will have to shut down soon in Pennsylvania, as farmers have sold their wheat and Ohio farmers are holding for more money.

A special investigation made by the Modern Miller to ascertain the condition of the winter wheat crop just before export compared the winter, the acreage seeded compared with last year, the evidence of heaviest fly, with last year, the evidence of heaviest fly, and the proportion of this year's wheat



## CURING EXPORT TOBACCO IN MONTGOMERY CO., TENN.

Hardwood fires are maintained on the floor of the tobacco barn during the curing, not only for the heat afforded but for the smoke, which adds a peculiar aroma and flavor particularly demanded for the English market.—Lapham & Miller, Bureau of Bolls.

crop still in farmers' hands, leads to the following conclusions: The condition is almost universally good and the only exceptions being a few localities in Texas and Kentucky, where there is complaint of lack of moisture. The plant generally has a good root growth, much better than at this time a year ago, which is greatly in its favor in the event of a severe winter. The presence of heaviest fly is noted in some sections of Missouri, Kansas, Illinois and Indiana, but only in early sown wheat, and no appreciable damage can be traced to that source as yet. The acreage is placed at about the same as was seeded last year. Of the amount of wheat in farmers' hands the Southwest has by far the greater proportion; in Kansas there is still about fifty per cent. of the grain unsold and in Oklahoma twenty-five to thirty-five per cent. In the country south of the Ohio river the amount of wheat still on the farms is the smallest noted. Elsewhere the average is about twenty-five per cent. This reserve in farmers' hands means that the farmers themselves rather than the speculators have been getting the benefit of good prices.

### Dull Hay Trade.

Most of the large markets of the country report a slack demand, and dealers in Eastern cities have rather more hay at hand than can be readily sold at prevailing prices. The long pasture season and mild weather following has somewhat lessened the usual consumption of hay. At the South and Southwest a very light demand prevails from cattle feeders. In some sections of the West the railroads have been unable to provide cars to move the hay from shipping points, yet the hay supply is usually more than sufficient on account of light demand. There is doubtless a large amount of low-grade and weather-damaged hay to be sold, and some dealers believe prices will have to go lower on such grades. Best hay is still in good demand and limited supply. It is the poorer stuff, if anything, that will depress the market. In New England and Canada there is a large reserve of commercial hay still in growers' hands, and held firmly for top prices.

At New York all grades below No. 1 are plenty and dull of sale. Some lessening in the supply is to be expected after the close of navigation, the middle of next month. Rye straw is no longer scarce. Supplies at Boston are in excess of demand and prices have been weak. Large arrivals of Canada hay would depress quotations.

The following table shows the highest prices as quoted for the Hay Trade Journal for hay in the markets mentioned: Boston \$18, New York \$18.50, Jersey City \$18, Philadelphia \$18, Pittsburg \$14.50, Minneapolis \$10.50, Baltimore \$15.50, Chicago \$13, Richmond \$15, Cincinnati \$13, New York \$13.50, Kansas City \$9.50, St. Louis \$12, Montreal \$11, Washington \$15.50, New Orleans \$15.50, Memphis \$13.35, Louisville \$13.

### Potatoes Steady.

The potato situation is very strong. Growers everywhere have been holding for better prices, and now that quotations have improved they are waiting for something still better. Buyers report that nothing can be bought even in Michigan or Dakota at less than 55 to 65 cents, which is pretty close to the present selling price in New York. Long Island stock sells at 75 cents at growers' stations. Many believe that cold weather and the need of using special cars for distant shipping will further advance the prices.

### Produce Notes.

The Canadian law requiring apple shippers and growers to mark their names on the packages is said to give good results. The shipments of wool from Boston to date from Dec. 31, 1902, are 299,419,329 pounds, against 245,266,529 pounds at the same date last year. The receipts to date are 239,380,182 pounds, against 238,133,371 pounds for the same period last year. The market is quiet with the usual amount of business, but when the season is the condition. Large holders, however, show no anxiety about the outcome. If the statistical position was strong on July 1 it is still stronger now, with stocks moderate and in strong hands.

North Dakota is buying York State Baldwins. Virginia truck growers are selling their second crop potatoes at \$1.75 per barrel. Potatoes are a good crop in North Dakota and bringing 65 cents a bushel. The first tomatoes of the season were shipped from Florida Nov. 12. Florida growers say vegetables will be a month earlier this season. Large areas are under crop.

Mr. Leonard of W. H. Farned & Sons, Boston, says that in his forty years of experience in the market business he has never before been compelled to charge such high prices as now. Farmers demand as high as 52 cents a dozen for the very best eggs at wholesale. The West, which is the great source of supply of eggs, is now very short on eggs, and these necessities are being shipped out there, instead of, as usual, from there to Eastern markets. The nuts and raisins trade almost doubles around Thanksgiving. There is a considerable shortage in black walnuts, and figs are a trifle higher this year.

Game of all kinds except venison is scarce and high.

Don't think rinsing will keep cans and dandy utensils clean; add boiling water, washing powder, muscle and sunshine.—L. W. Lighty, in National Stockman.

### The Saunterer.

Age does not necessarily deprive a man of his love for feminine beauty, as I realized the other day in a car on the "L" road. An old gentleman verging on eighty, if not past that time of life, got into the vehicle with a younger man. There were two end places vacant, one near a matronly looking dame, who might be a grandmother, and the other next a pretty young girl with roses that were not put on glowing on her cheeks.

"Here is a seat, father," said the more youthful of the recently arrived passengers, pointing to the spot beside the lady whose hair was gray and whose eyes were dim. "Oh, no, I thank you. I have my preferences," said the ancient beau, as he sat down close to the maiden, who could not help indulging in a laugh in which all her neighbors joined. Even the woman who had been overlooked smiled indulgently, but she could not help saying to me under her breath:

"There is no fool like an old fool." Feminine sarcasm never flies, though womanly beauty does. It is always carefully preserved in some portion of the female anatomy, and I have often wondered if it went with the fair sex into the land that is fairer than day, where the masculine portion of humanity ceases from troubling and their preferences are at rest.

"Come into my book-bank parlor and have your shoes polished, sir," said an urchin to me one day last week. "I regarded him gravely for a moment, and then remarked: " "Confound it, I take me into the library instead? I always have my upper leathers cleaned there."

"Oh, yes," was the prompt answer, "I have a fine collection of dime novels, and you can read one of them while I try to suit you like a book." The youngster got his job, and I wondered, while he was applying the blacking, why people do not give the right name to things. The rich man calls his giantically beautiful summer residence a hut, and the barber gives to the apartment where he uses the razor and shears on his patrons the title of Tonsorial Palace. But what's in a name? A nose by any other name would look as red in cold weather, and the only harm that I wish those people who are trying to turn our dictionaries topsy-turvy is that they may be pursued by the ghost of Dr. Samuel Johnson and the spectres of all our other lexicographers.

This reminds me of a little story that used to be told of the late John Stetson of Ogden, Utah. This former proprietor of the old Globe Theatre had written a word of his own lineage in a letter which he had requested his secretary to put into shape, and this young man, finding the term referred to, pointed to it and timidly remarked:

"That is not correct, Mr. Stetson." "What's the matter with it?" thundered the bellicose John. "Well," was the hesitating rejoinder, "it's not in the dictionary." "What in the blazes do I care for that?" roared the obstinate John. "Haven't I a good right to make a word as any son of a gun of a dictionary-maker?"

Then John, who was really good-hearted, though rough in manner, continued: "Well, suit yourself and put in what you like."

"I save fifty cents a week by shaving myself," said a friend of mine to his wife on Saturday morning.

"How long have you been doing this?" she asked innocently.

"Oh, about twenty years," was the response.

"Well, then," pursued his spouse, "you must have over five hundred dollars laid away, to say nothing of interest, and it would come in right handy for me now to buy Christmas presents." Seeing that he was caught, this economical husband made out a check and gave it to his wife from his running bank account, saying that he would let the money that he had saved by scraping himself remain untouched until Clara, that's his daughter, got married, when he would give it to her for a wedding present. Then he went down town wishing that he had not smoked so many good cigars or opened so many large cold bottles.

### The Export Meat and Cattle Trade.

"Owing to the enormous number of cattle sent from Canada to make up for the American deficiency, the price of meat at wholesale has recently been very low, but the consumers have not been much benefited thereby," writes James Boyle, United States Consul at Liverpool.

"The government of New Zealand has been in contemplation a plan for the establishment of meat depots, where the products of the colony would be sold at cost price; but the British wholesale and retail butchers are up in arms against the proposition, and so serious has this opposition become that the government of New Zealand is still hesitating about carrying out its plans. The removal of the restrictions from American cattle (from the States of Maine, New Hampshire, Vermont, Massachusetts, Connecticut and Rhode Island) tended to still further glut the market, and it is doubtful whether the dealers will be able much longer to obtain present prices. The prohibition on the importation of cattle from the Argentine Republic was removed early in the year, but was subsequently re-established, and the trade from that date has become thoroughly disorganized.

"During the year 1902, 324,431 head of cattle and 203,280 sheep were landed at Liverpool

from the United States; also 1,228,700 quarters, equal to 324,811,584 pounds of chilled beef. Owing to the prohibition of the importation into this country of live stock from the Argentine Republic, shipments of dressed beef from that country have developed considerably, and this has affected the American chilled-beef shipments to a very large extent.

"Owing to the high prices ruling in the United States for bacon and hams, there was a very considerable shrinkage in the quantities imported into England during 1902, especially toward the latter part of the year, when the effect of the high prices curtailing consumption came to be more acutely felt. Canada is a much stronger competitor with bacon from the United States than formerly, and Canadian bacon was imported in much larger quantities during 1902; the prices at times were actually lower than the prices of American bacon, though usually, owing to its leanness and superior quality (from an English standpoint) it brings from \$1.21 to \$1.94 more per hundredweight (112 pounds)."

### Special Fattening of Geese.

The premises in which French geese are fattened are, in many cases, not very presentable. But when we consider the houses and farm buildings generally in France, and compare with them such as are to be met with at home, it is scarcely to be wondered that this should be so. As a rule, old sheds of any sort or kind are turned into fattening places for the geese; and even open pens are employed, though with them are rough sheds into which they can go at night. Of course, geese are by nature dirty, and the places where they are kept are by no means attractive. That a dirty state like this is desirable, much less essential, to poultry rearing and fattening, cannot be conceded for a single moment.

To produce the finest geese, the birds are divided into flocks of twenty, each of which has a separate pen, and are fed upon steeped buckwheat. The food is placed in long troughs, which are filled with water, and upon which they are fed three times a day. No milk is used, yet the flesh is beautifully white, without any trace of fat, and has a firmness which is most desirable. It is said that meal, even buckwheat meal, does not produce the same quality as when the whole grain is employed. The process of fattening occupies three to four weeks, and when killed the birds are either sent direct to the merchants or sold in Le Mans Market, and these merchants pack and bring over to London.

### Massachusetts Board of Agriculture.

The forty-first public winter meeting of the Massachusetts State Board of Agriculture for lectures and discussions was held at Athol, Mass., this week. These meetings were inaugurated by the board in 1883, Massachusetts setting the example for other States, and have been held each year since that time. The lectures delivered at these meetings are included in the annual reports of the board, and their popularity and value is shown by the great call each year for this report by farmers and others interested in agriculture.

The programme provided for this meeting is today in the hands of the board, and is anything offered in the past, and it is the desire of those in charge of the meeting that as many as possible of the farmers of the State should attend its sessions, to secure information direct from the speakers and to take part in the discussions following the lectures.

An especially attractive subject is provided for the morning of Tuesday, Dec. 1, in a lecture on "Progressive and Profitable Poultry Culture," by Prof. A. A. Brigham of Marlboro, Mass. Professor Brigham was formerly at the Rhode Island Agricultural College, where he has established the pioneer poultry course of the country, and is now connected with the Columbia School of Poultry Culture. His knowledge of the poultry business is practical as well as scientific, and the board has shown due appreciation of the importance of the poultry industry by securing his services. In the afternoon Dr. R. E. Fennell of Ithaca, N. Y., lately chief of the division of forestry, United States Department of Agriculture, will speak on "A Forest Policy for Massachusetts." Interest in forestry questions is at a high pitch throughout the State, and Dr. Fennell is in the front rank of experts on forestry matters. It is not impossible that his suggestions may lead to the establishment of the forestry interests of the State on a permanent basis. The evening lecture will be by the Hon. Carroll D. White, United States Commissioner of Labor and president of Clark University, on "The Value of Art and Skill in Industry." This lecture was arranged at the special request of the townspeople of Athol, and an intellectual treat is assured them.

On the morning of the second day Dr. George M. Twitcheil, editor of the Maine Farmer, will address the meeting on "The Outlook for New England Agriculture." Dr. Twitcheil is a lecturer of more than sectional reputation, of great personal magnetism, and has devoted much of his thought to agricultural matters and problems. In the afternoon the well-known Worcester horse breeder and whip, Mr. Harry W. Smith, will speak on "The Successful Type of Horses that may be Profitably Raised by New England Farmers." Horse breeding has been a declining industry in New England of late years, but Mr. Smith will point out a line but little followed as yet, and his knowledge of the horse and the types of horse most readily marketable makes his advice of much value.

On Thursday, the last day, there will be but one lecture, the meeting closing at noon to allow all to reach their homes that night. Dr. H. J. Wheeler of Kingston, R. I., one of the foremost agricultural chemists of the country, will speak on "The Manual Problems of Soil Renovation and Improvement." The farmers of the State know Dr. Wheeler well, and this feature of the meeting will be especially anticipated. A reception to the board of agriculture and others attending the meeting, tendered by the citizens of Athol on Wednesday evening, will mark the social side of the occasion. The public sessions of the board will be held at the Academy of Music, and its headquarters will be at the Pequot House. The various agricultural organizations sending delegates to the meeting will find every courtesy shown to the representatives.

Farmers in the north of Sweden had a season very much like that in New England. Early droughts were followed by cold, rainy weather. Fodder crops failed, and outside help will be needed to carry the stock through the winter.

The annual meeting of the New England Milk Producers Union is scheduled for Jan. 14, at Boston. A London correspondent of the New York Sun predicts that within three months, probably before New Year's, direct telegraphic communication, without intermediate repeating stations, will be established for the first time between New York and London, and that telegrams will be exchanged at a speed of more than four times the previous capacity of the cable. He further expects that within a year it will be as feasible to converse by telephone between New York and London as it is across Manhattan.

The New York State Dairy Association will meet at Ogdensburg, Dec. 8-11.

Maine State Land Agent Ring has completed his figures for the forest fires which raged through northern and eastern Maine last June. He puts the losses at \$5,000,000 to \$6,000,000, and says much of this might have been averted if the State had had a force of trained fire wardens.

Congressman W. P. Brownlow of Tennessee re-introduced in the House, on Nov. 19, the well known road bill. Acting on the criticisms of opponents and the suggestions of friends, Colonel Brownlow has revised the bill somewhat, but all the important features have been preserved. The new bill appropriates \$24,000,000 to be used as a fund for national aid in the improvements

of highways. This sum is made available during the next three years, at the rate of eight millions annually. No State or subdivision thereof can secure any part of this fund without raising an amount equal to the share received. The distribution among the several States and territories is to be made on an equitable basis so as to leave no room for "log rolling." In reference to the bill, Colonel Brownlow said: "It will have strong support from the Eastern States where State aid has paved the way for national aid. I can't see how any man representing a rural constituency can vote for a river and harbor bill and refuse to vote for my bill. And I don't see how any one who wants the rural free mail delivery extended in his State or district can refuse to support a measure to aid in improving the roads, for bad roads are almost the sole obstacle to such extensions. I am hopeful of getting the bill up for discussion in the House early in the regular session."

A gift of shares of stock to employees was announced Nov. 19 by the stockholders of the McCormick Harvesting Machine Company. The action follows the consolidation of the McCormick plant with the "Harvester Trust" and is in recognition of the "efficient services of the employees." Stock in the International Harvester Company will be transferred to those who have worked for the McCormick company for consecutive years to the amount of five per cent. of the wages received during that period. The stock is to be held by trustees, and at any time the employees may leave they can get par or better in cash for their certificates.

## SMOKING MEAT WITH A BRUSH

Krauser's Liquid Extract of Smoke Replacing Old Methods.

In all parts of the country, among progressive, enterprising people, the smoke house, with its risks, annoyances and expense, is going rapidly out of use. Its place is taken, and more than filled, by Krauser's Liquid Extract of Smoke. Messrs. E. Krauser & Bro., of Milton, Pa., have succeeded in liquidifying hickory wood smoke so that all meats formerly smoked by fire—an operation occupying days—can now be smoked at home, in a few hours. Krauser's Liquid Extract of smoke is applied with a brush or sponge, and has all the ingredients that preserve meats smoked by the old way. It gives hams, sausages, beef, bacon, fish, and whatever is cured by its use a finer, sweeter flavor; keeps them from contamination by insects and mold, and is entirely wholesome. It is much cheaper and cleaner than the old smoke-house method, and permits of each piece of meat being treated to suit its own conditions—given a thick or a thin coat, as may be needed. It is so simple to apply that any one can do it, and the meat can then be hung in a garret, safe from smoke-house thieves, and no loss by fire.

For further information concerning this inexpensive but valuable liquid, write to the makers, E. Krauser & Bro., Milton, Pa.

### Practical Arithmetic in Schools.

Teachers of arithmetic in the upper grammar grades will do well to send to the Vermont Experiment Station, Burlington, Vt., for its free bulletin, No. 102, on the "Measurement of Saw Logs." It contains a new, simple and closely accurate rule or formula for the estimation of the board foot in a log and briefly discusses the general subject of sawlog measurement. The schoolboys of today in the rural schools will be the log sellers and buyers of tomorrow. This practical example in applied arithmetic will be useful in the after life of tens of thousands of school boys.

The bulletin will be sent without charge to any school teacher on request. A postal card addressed to the Experiment Station, Burlington, Vt., stating desires, is sufficient.

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# MASSACHUSETTS PLOUGHMAN

TELEPHONE NO. 3707 MAIN.

Seen from a distance it would seem unlikely that Mrs. Addicks' dressmaker will invest in many more stocks—except such as may be necessary to complete the necks of her dresses.

With what avidity Mr. Balzac would have noted down on his tablets the case of the suburban Bostonian who declared himself driven to alcoholic oblivion because his wife wouldn't take care of the family cat.

With all respect to Dr. Hodges, it is a question whether the young people who are deterred from marriage because they cannot afford the gorgeous display of wealthier lovers, are really quite ripe for a thoroughly successful partnership.

Somerville has the distinction of having the wheelbarrow riders of the present election season, but it is still open to the debating clubs to decide which performance is the more foolish, that of the man who rides in a wheelbarrow or that of the man who pushes.

Doubtless the recent bug case, so called, in our own Back Bay, will interest those Berlin real estate owners, who are meditating the offer of a tempting "first prize" for any remedy that shall discourage these small, but active enemies to domestic happiness.

To shut out would-be immigrants who cannot read and write, may be well enough, but what is most needed is something to sift out those who cannot or will not work. The illiterate foreigner may learn better, but the viciously lazy one is nearly hopeless.

We doubt very much, despite the magnetic attractions of Mrs. Duff, that any rival list of candidates will "do up the P. S. A. for good"—to quote one of the recent interviews. The P. S. A. has proved its ability not only to keep going, but to keep growing.

At all events the proceedings of the "well-dressed elderly man with gray whiskers," who has recently been victimizing the good people of Milford, were conducted on broad general principles. Those who bought experience of him were given their choice of nearly all the best known methods of instruction.

This is the time of year when the man on the farm can spend long evenings reading in the newspapers accounts of strikes, riots, fires, accidents, poverty and misery, wondering, as he sits there enjoying his apples, walnuts and cider, just what are those "city attractions" that some people have mentioned.

"I desire," says a student orator of Drake University, Iowa, after having been accused of appropriating largely from the orations of others, "an opportunity to set myself right in the eyes of the world." Robespierre, unless we are mistaken, once modestly announced himself as the "tribune of the Universe."

The price of turkeys, like the wily bird himself, roasts high. Farmers who have raised none may console themselves a little with the thought that the scarcity of turkeys means a better price for chickens. The consumer of either must pay a good price, and likewise for the cranberry sauce to go with them.

It is pleasant to call attention to the dainty modesty with which the Booklover's Magazine declares itself "loaded to the water's edge with good stuff put up in an attractive and pleasing way." But isn't this rather a dangerous addition? If anything more were added it appears likely that our contemporary would sink.

Thanksgiving comes but once a year, and we are therefore not seriously disturbed over the continuance of that ancient custom, the turkey raffle, down Marshfield way, despite the combined efforts of a determined constabulary and a vigilant local branch of the W. C. T. U. The dark affair was conducted in a barn and apparently very well attended.

In view of the report from St. Louis that freaks and oddities are now in demand, in order that amusement may go hand in hand with instruction at the approaching exposition, why shouldn't somebody make and submit a collection of the various schemes devised by our generous contemporaries for giving away sums of money to their enthusiastic and admiring readers.

The notion that the Jaracilla Apaches have taken the war path simply because a teacher in an industrial school has ordered their children to take baths, goes no more to the root of the matter than the idea, obviously taken away from the theatre by some auditors, that Mr. Helaso's Japanese warriors retreated simply because they weren't permitted to carry two swords at a time.

Western farmers and Eastern meat consumers are considerably puzzled over the fact that while hogs sell at \$500 less per carload than they did a year ago, and while beef on the hoof has been declining in the same rate, yet the public is still paying about the same fancy prices for steaks, chops and roasts. Perhaps the packing-house magnates at Chicago and Kansas City might explain, but they are apparently very busy cutting pork, beef and coupons and have nothing to say.

Out in Florence, Wis., there has been formed a club that presents a striking contrast to the many organizations that the thoughtless young have now and then instituted to oppose matrimony. Far from opposing matrimony, the purpose of the club, which is evidently composed of rather determined young women, is "to provide each member with a husband whose conduct, from all points of view, is irreproachable. We trust the membership is small enough to make this happy outcome a possibility.

The latest muddle into which the unlucky officials of the St. Louis exposition have plunged themselves is with the Canadian breeders of live stock who refuse to send exhibits to St. Louis unless the rules and conditions of admission are changed to suit. The Canadians claim the American breeders fear competition, and the officials of the fair are playing the difficult role of peace-makers. Indications are that the fair will include the greatest exhibit of agricultural features and products ever brought together.

Although "nature study" among adults has all too often assumed the outward seeming of an absurd affectation, any successful effort to train children to an appreciation of the intrinsic interest of our natural environment is an important factor in making their adult lives more interesting and valuable. For that reason, if for no other, the proposed fund to the memory of Prof. Alpheus Hyatt should meet with a generous response, even from those who had no acquaintance with the late curator of the Museum of Natural History, and therefore do not find another reason in their recollections of a wise scholar and a delightful gentleman.

An interesting suggestion at the apple growers congress was to set apart an "apple day" at the fair, on which occasion apples should be given to every visitor. The plan might well be used to help make popular certain varieties more remarkable for quality than for mere appearance. The consuming public needs education in the fact that quality in apples is something more than skin deep. Another good thing would be a free lunch of a nicely baked apple served with cream. Not half so many baked apples are used as would be good for the public health and enjoyment, and by no means everybody knows the delicious quality of the right kind of an apple properly cooked and served.

With the annual festival sacred to turkey, cranberry sauce and mince pie hard upon us, it is good to hark back a bit to the meaning of this holiday. Fortunately, the name helps us somewhat. Though foot-ball and gastronomic activities may absorb our interest, we cannot, so long as the day is called by the good old-fashioned name, forget utterly that its original intention was to insure a public giving of thanks. In the old proclamations, definite mention was made of the things for which the people should be thankful. President Washington, for instance, in his proclamation of the year 1796, mentions as an object of gratitude "our exemption from a foreign war." Another cause of thanksgiving, according to the same high authority, is "the great degree of internal tranquility we have enjoyed." And in another place the President repeats this idea, asking his people "to render a tribute of praise and gratitude to the Great Disposer of all events, for the seasonable control which has been given to a spirit of disorder in the suppression of the late insurrection. What the President had in mind just here was a difficulty in Pennsylvania caused by the passage of certain acts of Congress of which some good Americans so disapproved that it took Governor Lee of Maryland and fifteen thousand of his troops to put down the rebellion that ensued. We might, following Washington's example, give very sincere thanks this year that another great insurrection in Pennsylvania has been happily settled. Surely, we have much more reason now than twelve months ago to express our gratitude for the "fruits of the earth,"—of which coal is one of the most valuable and necessary.

## The Long-Term Pastorale.

Sunday marked the completion by Rev. Leighton Parks, D. D., rector of Emmanuel Church on Newbury street, of a quarter century's continuous service at his present post. The anniversary is a significant one, inasmuch as it comparatively seldom happens in these days of constant aspiration on the part of ministers and perpetual unrest on the part of congregations that a clergyman serves a flock for so long a period of time. In the old days things were quite different. The history of the religious lives of our ancestors shows us that a clergyman often remained in charge of one parish all the years of his manhood. John Elliot presided over the church at Roxbury for almost sixty years, from the time, indeed, when he landed in Boston from his old home in England a very young man, until he passed away, ripe in years and good deeds, a veritable Apostle. Joseph Sewell similarly served the Old South Church, and instances might easily be multiplied from history to show that it was the rule rather than the exception for a clergyman's tenure of a parish to be regarded as a life one. By this method the men in the pulpit were more than preachers, the pastors of a flock more than occasional advisers. For a clergyman who had married a young couple, baptized all the children that came to them (burying perhaps two or three as the years rolled on), officiated again in the solemn service that came when the children were ready to take home, and in their turn become fathers and mothers, naturally grew to be an integral and very precious part of his people's life.

From some points of view it seems a great pity that the modern interpretation of the pastoral relation as a semi-business, and hence, temporary one, should ever have come into fashion. A clergyman must be so much better able to act as a wise spiritual adviser when he knows thoroughly the temptations that have been overcome, the sorrows that have been borne, the joys that have been renounced and the hereditary traits that are being struggled against by the man who comes to him for help! For this reason it is especially pleasant to find that the good old custom of retaining a faithful minister for long periods of years has not yet wholly passed away. In this vicinity there are, indeed, three clergymen of the Episcopal church who have already passed more than twenty-five years of continuous service in their respective parishes: The Rev. George Prescott, minister of the Church of the Good Shepherd, the Rev. Leonard K. Storrs, rector of St. Paul's, Brookline, and Dr. Reginald Heber Howe, pastor of the Church of Our Savior, Longwood. And to these is now to be added the name of Dr. Parks. In the Unitarian denomination are to be found a few clergymen with similarly impressive records. Dr. Edward Everett Hale has for almost fifty years ministered to the people of the South Congregational Church, and Rev. James de Normandie has served at the church, once John Elliot's, more than a score of years. Rev. Samuel E. Herriot, though now less actively in the field than heretofore, has been connected for more than thirty years with the Mt. Vernon Church (interesting as the church where Dwight L. Moody, the Evangelist of such wide reputation, first professed religion), and Rev. Charles H. Dole has for over a quarter of a century served the First Church in Jamaica Plain.

To see how valuable the long-term pastorate is, one has only to observe somewhat closely the work done by Dr. Parks, who has supplied us with our text. The rector of the church on Newbury street had just graduated from his theological school and was fresh from a Southern education when he first came to Boston. He threw himself ardently into his work, with the result that not only his congregation prospered, but the church throughout New England, has been strengthened and uplifted by his preaching

and practice. Dr. Parks has never appealed to the gallery, has never in any way tried to "advertise." But more than once he has ranged himself emphatically on the unpopular side in questions of national importance, and has spoken right manfully, differ from him who might, about the matter at hand. He offers a fine example of the Christian gentleman, who is also in the best sense of the word a citizen of the world. To considerable extent, no doubt, his notable catholicity of spirit, no less than his love of his work, came from the close friendship that existed for many years between Dr. Parks and Bishop Brooks. Dr. Brooks was himself a long-term pastor, and from 1860, when he began his ministry in Boston, up to 1891 when he was perforce raised to the bishopric, he increased each year in breadth of sympathy and in love for the profession he had chosen. In a letter—written, if we mistake not, to Dr. Parks himself,—the whole Oliver Wendell Holmes called "the ideal minister of the American Gospel," spoke thus beautifully of his joy in his work: "The old round of parish duties, which I have gone to fresh every autumn for twelve years has opened again, and I have been rather surprised at myself to find that I take it up with just as much interest as ever. I suppose that other men feel it of their occupation, but I can hardly imagine that any other profession can be as interesting as mine. I am more and more glad I am a parson." To Dr. Parks, Dr. Hale and the other long-term preachers, as to Dr. Brooks, Time has doubtless so wrought as to make the pastoral relation seem almost the most beautiful, as it is certainly the most noble, on earth.

## The Short Working Day.

Eight hours, today the recognized length of a day's labor in most places in the civilized world where skilled workmen are employed, is so vast an improvement over the conditions which obtained within the memory of the oldest among us, that it has come to stand almost for the ideal. Yet it appears that some of the workers are not satisfied even yet. At a recent conference in Sydney, the president of the Australian Federation of Labor said to his fellow workmen that the establishment of the eight-hour day by law in their country ought to inspire them to begin agitating at once for a six-hour day. The sentiment was heartily applauded. The propaganda for a six-hour day may, therefore, be regarded as fairly out. Are we to conclude that it will be duly followed by a movement for a four-hour day, and that, in turn, by a struggle for a two-hour day? If so, the final state of man would seem to be that of Eden before the Fall, work-less, which is decidedly not to be desired, inasmuch as this is after the Fall. When civilized man has no work to do he will be a very difficult creature, indeed, to manage. Even a six-hour day would not prove an unmixer blessing.

There are very many people, indeed, who say with considerable truth that our workmen have more leisure now than they can properly and profitably use, and that, instead of increasing the amount of contentment and happiness in the world, a six-hour day would very probably add to the sum of vice, crime and misery. Work is undoubtedly the salvation of most of us. The petty crimes of the city come very largely from the surplusage of leisure at the command of those who do not know how to spend their time advantageously. Our mission churches and our young men's clubs are grappling all the time with the problem of keeping boys off the street and men out of the saloons. The boys must be amused, the men must be entertained during the leisure hours, they see. If some definite thing is not provided for them to do, sin and misery inevitably follow. The reason that our gilded youths and our rich men have, many of them, a very low moral tone, is because they have nothing to do and lack the brain to fill their time profitably.

In a work recently published the great Russian novelist, Gorky, has masterfully depicted the depths to which the half-educated man of wealth falls because of too much leisure. The very inventions which we so proudly show to be new, to work to drag the man down, for where his father had been obliged to take long journeys and encounter elemental difficulties in order to earn money, the son can sit at his desk and telephone, can use steamboats instead of merchant packets and a luxurious carriage instead of his legs. Because of this the son has a great deal of leisure,—and lacks that physical contact with life which makes a man healthily tired. Vice followed easily. Exactly the same thing is true of American life. One thing, however, we may have as our salvation. That is, a sane belief in the efficacy and the worth of outdoor exercise. About thirty years ago Colonel T. W. Higginson wrote his "Outdoor Papers." He was for the first time called the attention of the average New Englander to scenes of Nature and the inspiration of regular exercise. About thirty years ago, also, our hours of labor first began to be reduced. The cure was provided when the disease arose. England has always had a leisure class, and it has kept itself healthy and fairly normal by spending from eight to ten hours a day out of doors, pursuing some form or other of what is called "sport." The American nervous system needs, far more than does the English temperament, all the help it can get from outdoor exercise. We can keep our pulse at our working day grows shorter only by increasing proportionately our hours of outdoor life. Madness and the degeneration of which Max Nordau wrote will be the inevitable result for the classes and masses alike of leisure unredeemed by a love of outdoor life and ability to enjoy healthy mental diversion.

## The Eternal Question.

The servant-girl question is one of unceasing interest and the plans for its settlement are innumerable. One of the latest of these comes from a New York housekeeper, who says, in the Sun, that shorter hours is the real solution of the matter. She is of the opinion that hotels, boarding houses and restaurants have less trouble with their help than private houses, because their force of workers have stated hours of labor, and when they are concluded the remaining time is absolutely at the disposal of these servants, and they are privileged to go where they please, and are obliged to be in doors to be summoned on any emergency that may arise. The consequence is that the hotels and other places of a similar character are able to get all the servants they need at lower wages than those offered in private households. She calls attention to the fact that at the Waldorf-Astoria chambermaids finish their work for the day at 4 P. M., and their pay is only \$10 a month, though of course they are in the way of getting tips from the guests. But the girls are attracted to positions of the kind mentioned less by the money received than by the knowledge that they are entirely their own mistresses comparatively early in the afternoon. One hotel girl who was ques-

tioned said that she had lived in first-class families where she never had an hour to herself, from seven in the morning until ten at night, except once a week. The housekeeper referred to above took a hint from this and established a new rule, whereby she secured comparative peace within her domestic domain. She could afford only two female servants for her family of five persons. She secured a cook at twenty dollars a month, with the understanding that she should not begin work daily until noon, and a chambermaid at eighteen dollars monthly, who was promised release from duty at four in the afternoon. Then this enterprising housekeeper advertised for a young man who understood the duties of butler, who would be willing to do his tasks from 4 P. M. to 10 P. M. at twelve dollars monthly, and she obtained the services of a competent person at that rate who does not sleep in the house, though the other servants do. The result is that she pays only five dollars a month more than she formerly paid to two women servants, and she has much better service.

The one drawback to this arrangement, we are told, is that the family has to be content with a simple breakfast, which is cooked and served by the chambermaid, but in these days when fasting in the morning has become somewhat of a fad, this is, perhaps, no great deprivation. The cook in the meanwhile goes off to visit her friends, and does not reappear until it is time for her to prepare luncheon. The butler waits at dinner, so the chambermaid finds no fault because of her work in getting ready the first meal of the day. The servants are thoroughly respectable, and, therefore, no questions are asked about their whereabouts while they are not at work. This housekeeper believes that neither women nor men should be required to work more than eight or nine hours a day, and in her view, this allotment of time can be easily made, but in households where there is only one servant employed her system could not be followed, though she believes that if any housekeeper should advertise for a general housework girl and say hours from eleven to eight or from seven to four, she would have very little trouble in getting suited. Perhaps if something like her method were adopted, more intelligent girls could be obtained for domestic work, as many girls work in factories or shops for comparatively small wages, because they can have their evenings to themselves, to visit or receive their friends. It is the long hours and the confinement that keep many of these young women from living out. They would appreciate the comforts that they would find in a well-conducted home, but they love their freedom more than they do the good room and the comfortable food which many of them cannot obtain from their wages as shop or factory girls.

Perhaps by and by we may adopt the Southern custom of letting servants go to their own homes every night, except at such times as their services are indispensable. At present we have to put up with incompetent girls, who never improve because they lack intelligence, while there are hundreds of young women, who have been fairly educated in our public schools, who would make excellent servants, if conditions were changed and they were allowed reasonable liberty.

## The Food Problem in Our Colleges.

Discussion of one phase of college life that sadly needs to be brought prominently to the public eye has recently been precipitated by the flagrant offence against good manners, committed in a college dining-hall by a student whose very soul was wrought at what was given him to eat. The student in question threw his food at his neighbors. He had endured one particular dish as long as it seemed to him becoming. After our editorial writers had vented their spleen upon the shocking lack of breeding displayed by this particular youth, it occurred to some of them to penetrate to the cause of his burst of temper. They have now concluded that there was and is grave reason for dissatisfaction on the part of students concerning the food with which they are served.

Statistics to bear upon the food-supply matter in our colleges are very difficult of access, but undoubtedly it is true that this department is far less satisfactory than it should be. A fairly large proportion of American colleges and universities maintain restaurants or dining "commons," but that the food served in these places is attractive and wholesome one can scarcely believe. Certainly the fare at Memorial Hall in Cambridge leaves much to be desired, undeniable as it is that very great pains are taken to have it as good as it can be for the price paid.

A possible solution of the vexed food question has been suggested by our friend, the Transcript. Why, it questions, should not the college supply six dollar board for three dollars just as it supplies one thousand dollar intellectual fare for the comparatively small sum of one hundred and fifty dollars? "Here is a chance for philanthropy that would be substantially appreciated by the eaters three times a day, and in the intervals between meals, because of the added capacity for work, and because of the general and justified feeling of satisfaction that follows a good meal in clean surroundings."

Good food and plenty of it is of fundamental importance, of course, to college students. Very often the undergraduate period undermines a man's health permanently, because at this time when he is working hard and long, and is particularly in need of nutritious food served in a comfortable place, he gets only poor cheap stuff and must eat it amid a rabble. Most college men do not hesitate to say that the dining-room part of their college life is the only one upon which they look back with absolutely no pleasure. Now this is not at all as it should be, for meantime offers excellent opportunities for relaxation and sociability. Let some rich man endow a dining-hall, and we shall have far more examples of the *mens sana in corpore sano* than can at present be found.

## Maine Fruit Growers Meet.

Attendance was large at the annual meeting of the Maine Pomological Society, Auburn, Me., Nov. 10-11. There was an exhibit of fruits and flowers and several notable addresses were given. President Z. A. Gilbert spoke of the need of more systematic work and a more reliable knowledge of the actual crop from year to year. There was also, he thought, a pressing need for careful knowledge in regard to varieties to prevent mistakes in planting. The well-known orchardist of North Hadley, Mass., John W. Clark, related his experience in use of cold storage. "Fruit must be well grown as well as handled," said Mr. Clark. "We must not wait until it is ready to pick before beginning to care for it, but commence the moment the buds begin to burst." Mr. Clark then gave a full description of a cold-storage house. An lo-

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box should always be placed in the roof and around this an open space. Directly below this should be a floor of galvanized iron, while the lower or ground floor should be of brick. Cold weather then made no change, but the temperature was kept even. The thick floor beneath prevented too much cold from that direction. Mr. Clark advised the orchardists to consider well this question, for upon its final adoption depended the final success or failure of this industry in New England.

Further points on cold storage were given by the Government expert, E. H. Powell of Washington. He asserted that the immature and partly colored fruit does not always have the best keeping quality.

The experiments indicate that so far as maturity is concerned, the ideal keeping apple is one that is fully grown, highly colored, but still hard and firm when picked. Apples that are to be stored in a local cold-storage house to be distributed to the markets in cooler weather may be picked much later than fruit requiring ten days or more in transit, but the use of the refrigerator car makes later picking possible when the fruit must be in transit for considerable time in warm weather in reaching a distant storage house.

The scald always appears first on the green or less mature side of the apple. The portions grown in the shade and under-colored are therefore most seriously affected. When the apple crop is picked before it is mature the fruit is more susceptible to scald than it would have been later in the season.

Mr. Powell had found that fruit had kept longer in boxes than barrels in cold storage, and that there is much less decay when the fruit is wrapped separately in paper. The Northern Spy wrapped in newspaper showed only 5.6 per cent. of decayed fruit compared with fifty-two per cent. when unwrapped. The double wrapper was better than a single wrapper. A good combination consists of porous newspaper unprinted next to the fruit with a waxed or paraffine paper on the outside. It would pay to wrap only the finest grades of fruit, and for the tender varieties like McIntosh, Wealthy, Northern Spy, Jonathan. An instructive feature of the second day's programme was the experience of S. H. Dawes of Harrison on use of fertilizers in an apple orchard. Fertilizer not costing over \$15 gave an increase of 108 barrels as compared with trees not fertilized. The increase at seventy-five cents a barrel was worth \$81, leaving a net profit of \$63.

Good results from use of barn-yard manure were reported by V. P. DeCoster, who said he had raised nearly all his own trees from the seed, using nothing but barn dressing, applied little and often, and aided by plowing and harrowing. Some of the trees bore six to eight barrels of apples. Another formula for fruit fertilizer was given by C. S. Phinney of Standish as follows: "Ammonia, three to four per cent.; soluble and available phosphoric acid, seven to nine per cent.; total phosphoric acid, thirteen to fifteen per cent.; potash in the form of muriate, ten to twelve per cent. Apply at the rate of six hundred pounds to the acre among mature trees. This will make a vigorous growth and give hardness, color and flavor to the fruit. Above all things else practice tillage. Do not allow grass to grow in your orchards."

The official report of Secretary D. H. Knowlton spoke of a very general planting in small lots of trees all over the State. Sales were being pushed vigorously by nurserymen. Referring to the fruits exhibited at the meeting Secretary Knowlton said: "There are over twelve hundred plates of apples and at least 125 plates of pears. In all there are sixty-five different exhibitors, and they come from every county in the State except Aroostook and York. I tell you this is going to be a great boom for the orchard interests of Maine."

The following officers were elected: President, Z. A. Gilbert, Greene; First Vice-President, D. P. True, Leeds; Second Vice-President, C. H. George, Hebron; Secretary, D. H. Knowlton, Farmington; Treasurer, Charles S. Pope, Manchester; Executive Committee, R. H. Libby, Newport, V. P. DeCoster, Buckfield, C. A. Arnold, Aroostook; Auditor, Dr. George M. Twitchell, Augusta.

It was decided not to make an exhibit at St. Louis. Resolutions condemning the St. Louis commission for not rendering the society aid in making an exhibit at the exposition were passed, and it was voted that no exhibit be attempted.

## Worthless Free Seeds.

The free seed distribution was originally a system of sending trial samples of new and promising varieties for testing by the farmers. Usually the experiment did not amount to much because the farmers had already been growing the varieties sent out, having obtained seed years before from enterprising dealers. But the distribution did no special harm.

Of late years, however, the distribution has become a kind of perquisite for the Congressmen. In order to make themselves solid with voters they have insisted on a great and increasing number of seed packages without any special regard to the quality of the seed. The idea evidently is that a fairly bulky package of seed will offset any amount of neglect of farmers' interests in general legislation.

Last year the distribution was worse than ever before. There was a large range of cheap varieties. To make the appropriation cover the calls, the department was obliged to buy low-grade seeds, full of bugs and otherwise inferior. There was general complaint that the free seeds would not come up well or grow, and those who depended on Government seed for their gardens suffered considerable loss. It is alleged that millions of packets of seeds left over were destroyed because infested with insects. Nobody knows just where the special agent buys the seeds, but the purchases are evidently "bargain" lots, or else the department is imposed upon.

This year it is said the distribution will be still larger. It is hard to see how seeds, to cost but a little more than half a cent a packet, can be any better than the worst than useless distributions of last year. They may be worse. But not much can be found out concerning the true inwardness of the whole business unless somebody gets up a Congressional investigation. Meanwhile many of the farmers' organizations are opposing the system, and it is known that the Department of Agriculture has very little respect or liking for

the plan, but is compelled to follow it by the seed-grabbing Congressmen. As for the farmers, many of them consider the distribution too much in the nature of a petty bribe or charity, and the more independent systematic and sensible seed tests might be a good thing if properly managed, have no use for a plan which dumps seed rubbish for odds and ends of that nature upon the public. The seed-sower, of course, is strongly in opposition, as the free seed, however bad it may be, affects the seed, their goods and tends to lower the standard. The present system should be suppressed and the distribution, if any, made directly by the National Department of Agriculture and by the State experiment stations.

## Care of House Plants.

The advent of colder weather means increased fire heat, the latter also meaning increased aridity or dryness of the atmosphere. The latter condition will probably induce a fall in insect pests, unless precautions are taken to prevent their appearance. Green fly and red spider are most to be feared, especially the latter, as their appearance is not so easily detected as that of the aphid, or green fly. Copious sprinkling and syringing with cold water is the best preventive for the attacks of the so-called red spider. Salvias, fuchsias, roses and carnations are first favorites with this little pest. When first attacked, the leaves of these plants present a whitish, dusty-looking appearance, especially on the underneath side, and the leaves will soon commence dropping twice every day. Tobacco water is the best remedy for green fly, although tobacco leaf or stems, or even a cigar thoroughly dried and rubbed into a fine powder and sprinkled on the plants infested with green fly will generally rid the plant of them. The latter application is best made after the plants have been recently sprinkled or syringed, as the tobacco dust adheres better when the foliage of the plant is moist.—William Hunt, Guilford, Conn.

## Among the Farmers.

In the coldest weather I put a cheap, light cover across the silo, about six feet above the top of the silage where I am feeding, and then by covering this with straw and planer shavings and opening the door into the stable the frozen silage soon thaws out if scattered around the surface. In our coldest weather it will freeze some around the walls, but by digging it away and scattering it over the silo it thaws out before the next feeding.—D. B. Foster, Fairchild, Wis.

It is the result of experience that the more weight of seed you put into the ground the more yield. You get more yield where you put in more starch as food for the young plants. We can best afford to take ten or fifteen bushels of seed to the acre under ordinary New England conditions. I approve of planting small potatoes whole and larger ones cut in halves.—L. R. Jones, Burlington County, Vt.

I have just returned from Auburn, where we had a very successful meeting of the Maine State Pomological Society. We had 1100 plates of apples; the finest exhibit ever in Maine.—F. H. Libbey, Newport, Me. I set out one thousand Duchess trees and they did not get rain until September after I set them out, and they didn't lead out until then, but they are quite big trees now for the time they have been in. I do not think I would water my trees. I would rather plant more the next year.—T. F. Loope, Eureka, Wis.

If a farmer has not sufficient manure with which to raise a large amount of ensilage, it can be raised successfully upon commercial fertilizers. It has been demonstrated over and over again that chemicals, when the nature of the soil is carefully studied and they are intelligently applied, are a profitable source of plant food, enabling the farmer to extend his operation to the limit of his acreage.—A. W. Gilman, Kennebec County, Me.

The freight on four hundred pounds of butter from here to Boston probably would not be any more than the freight on seven bushels of potatoes, and the butter ought to bring \$100, while the potatoes would sell for about \$3.85. It seems to me it would be better to send the products of the soil to market in a condensed form.—R. Alden, Winthrop, Me.

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## Our Homes.

### Washing Blankets.

Soft, fleecy blankets are a luxury that every one appreciates. They are lighter and warmer than quilts or comforters, and should form a part, at least, of every bed. They are not expensive if they are properly cared for, but they are easily soiled and their durability, and their softness, do not last long. The better and softer a blanket is, the more likely it is to retain disease germs and dust, and for that reason a blanket should be washed once or twice a year. The following method has been followed by a practical housekeeper for years with the best results:

If you have a good washing-machine, and wringer, you will find it excellent for washing blankets. Put a small package of gold-dust washing powder in a kettle and pour over it half a gallon of boiling water. It will dissolve in a few minutes. Fill the washing-machine with the dissolved powder to make a strong suds. Put one or two blankets in, and wash until the water is dirty. It is surprising how much dirt will come out of a blanket that seems but little soiled when you begin. Run it through the wringer and wash it through a second suds prepared as the first one was. Rinse it in clear soft water until every trace of suds is removed and hang it on the line, taking care to shake it until it hangs without wrinkles or creases. A bright day that is not cold enough to freeze is the best time to dry blankets. Be sure they are perfectly dry before they are used. E. J. C.

### Girl Nurses.

All girls should know a little about nursing, so as to be of use in times of sickness. One of the most important things to see to is the bed. Very few people really know how to make a bed properly; that is, to put the sheets on evenly and smoothly. The sheets should be large enough to be securely tucked under the edges of the mattress, and the greatest care should be taken to smooth out all the creases, as nothing frightens a patient so much as crumpled sheets or sheets that keep slipping to one side.

Then the pillows. The proper way to arrange them is so that they are neither too high nor too low, just of a medium height, to rest the back of the patient when sitting up.

Changing and shaking up the pillows when they have become crumpled takes but a little time, but is very comforting and refreshing to the patient.

The covering of the bed should vary according to the temperature of the room, the nature of the sickness, the feelings of the patient and the time of the year. Whatever these conditions, the coverings should be as light as is consistent with the comfort of the patient.

Feather beds should never be used in cases of sickness. They are uncomfortable for the patient and keep the body unnecessarily warm.

### Evil of Wrong Thinking.

Wrong thinking is indicative of weakness; it is, indeed, a species of insanity, for a wrong thinking is continually testing one's own mind and working his own mental and physical structure. The right thinker is the only sane thinker, and he is the happiest as well as the most successful man. He knows better than to keep constantly tripping himself up with the adverse thoughts which produce destructive conditions.

We all know the disastrous effects of wrong thinking. We know by experience how it cripples us mentally and physically. Physicians are well aware that anger poisons the blood and that fear, anxiety, fretting and all other inharmonious thoughts seriously interfere with the normal action of all the bodily functions. They are also alive to the fact that anxiety or apprehension of impending disaster, if of long duration, is liable to bring on paralysis. It is an established fact that a mother is not only seriously affected by her own thoughts, but that it affects her infant to such an extent that the same symptoms and conditions from which the mother suffers are reproduced in the body of the infant. Selfishness, jealousy and envy long indulged in tend to produce serious liver troubles and certain forms of dyspepsia. Lack of self-control and habitual indulgence in violent passions shatter the nervous system, lessen the will power and induce various disorders. Worry is one of the greatest enemies of the human race; it carries its deep furrows wherever it goes; it carries gloom and unhappiness with it; it delays or prevents the processes of digestion and assimilation until the starved brain and nerve cells utter their protest in various kinds of disease.

Wrong thinking, whatever its nature, leaves indelible scars on mind and body alike. It affects character and material prospects equally. Every time you grumble or find fault; every time you lose your temper; every time you do a mean, contemptible thing you suffer a loss which cannot be repaired. You lose a certain amount of power, of self-respect and of an uplifting and up-building character-force. You are conscious of your loss, too, which tends to weaken you still further.

A business man will find that every time he gets out of sorts, flies into a rage or "goes all to pieces" when things go wrong he is not only seriously injuring his health, but is also crippling his business. He is making himself repellent; he is driving away success conditions.

A man who wants to do his best must keep himself in good mental trim. If he would achieve the highest success he must be a correct thinker. He cannot think discord and bring harmonious conditions into his business. His wrong thought will honeycomb and undermine his prospects in life. —Orison Sweet Marden, in *October Success*.

### How to Get Out of Bed.

Don't jump up the first thing your eyes are open. Remember that while you sleep the vital organs are at rest. The vitality is lowered and the circulation not so strong. A sudden spring out of bed is a shock to these organs, especially to the heart, as it starts to pumping the blood suddenly.

Take your time in getting up. Yawn and stretch. Wake up slowly. Give the vital organs a chance to resume their work gradually.

Notice how a baby wakes up. It stretches its arms and legs, rubs its eyes and yawns and wakes up slowly. Watch a kitten wake up. First it stretches out one leg, then another, rubs its face, rolls over and stretches the whole body. The bird does not wake up and fly as soon as its eyes are open; they shake out their wings and stretch their legs, waking up slowly. This is the natural way to wake up. Don't jump up suddenly, don't be in such a hurry, but stretch and yawn and yawn and stretch. Stretch the arms and legs; stretch the whole body. A good yawn and stretch is

better even than a cold bath. It will get you thoroughly awake, and then you will enjoy the bath all the more.—Medical Talk.

### Proper Care of Feet.

An interesting commentary on modern civilization is to be found in a treatise on the human foot and its clothing by Charles O. Kahler of New York, surgeon-chiro-podist, entitled "Our Feet." The illustrations of diseased and deformed feet in this little volume are so revolting that it is scarcely possible to look at them. Yet many American women with beautiful hands and forms and faces of almost perfect contour have feet quite as badly deformed as the various ones represent, says the author.

These shocking results are attributed to the baneful effects of fashion, the ignorance of boot and shoe makers regarding the anatomy of the foot and a general lack of knowledge as to the proper care of this much-abused member, which is "so delicate and sensitive that even short and badly shaped stockings have been known to throw its joints out."

As to the inquiry of crowding five toes into a space that is only sufficient for two, it is scarcely worth while to repeat Dr. Kahler's remarks, for everything possible has been said on that subject already, without effect; but some of his other observations on the care of the feet may be of interest.

The fit of stockings is almost as important as that of shoes, he says, and in order that they may fit it is necessary that they shall have a right and left to the pair. Such stockings wear longer than the ordinary variety, because there is less strain on them. They should have a few seams as possible, as these cause corns, and a stocking that is too short is just as injurious as a shoe that has the same fault. Colored stockings are a source of danger to thin and sensitive skins, but stockings with white feet are just as good as those that are entirely white.

The feet should be bathed at night, and by removing aches and weariness this treatment is an excellent sleep producer. The water should be salted, allowing a quart of brine to a quart of water, and may be hot or cold, according to individual constitution. The feet should be scrubbed all over with nail brush, which will often prevent the formation of corns, and callouses on the soles may be removed with a piece of fine emery paper or fine file, before the feet are placed in water. The brine may be made by dissolving a pint of sea salt in two quarts of water, pouring it into a covered jar or bottle, and allowing it to stand for twenty-four hours. As the brine is used the bottle may be filled with clear water, repeating the process till all the salt is gone.

The feet of children should receive the most careful attention, for neglect at that time may lay the foundation for many future ills. Since the feet of a child are in process of development, the bones and ligaments are soft and pliable, and will conform to a bad as well as to a properly shaped shoe. Hence shoes of a sufficient length and breadth, with snug heels and close-fitting instep, can alone make it possible for a child to grow up with perfect feet. Children, if sent to a reliable surgeon-chiro-podist at regular intervals to have their feet examined and the toe-nails cut, will avoid many if not all the ailments due to ill-fitting shoes and stockings, as he can tell at a glance when anything is the matter and prevent any further progress of the trouble. Even adults will find their feet greatly benefited by following this advice, and before many years have passed the public may regard the chiro-podist as necessary to their well-being as the dentist or physician.

### Just Try Running.

To take a mile run daily, as a man in training would do it, is the best way in the world for a girl to get color into her cheeks and sparkle into her eyes. "If girls would turn their attention to running, they would find it the most exhilarating pastime in the world, as well as one of the most healthful," says an authority on athletics. "Besides adding roses to the cheeks and inches to the lungs, running is the stout woman's best resource. "Let her take a brisk run daily, beginning with a few yards, and getting up to a mile or thereabouts and she will not need to resort to a diet—that most melancholy and depressing method of reducing avoirdupois."

If a run cannot be taken daily out of doors, the running track found at every well-equipped gymnasium should be utilized. A run out of doors, however, is the ideal practice, for it brings the girl into contact with the elements of life. It is fresh air that gives a girl bewitching color in her cheeks and purifies every drop of blood in her body.

After a little practice a girl can run half a mile without stopping. Then let her pause for a two-minute rest before doing the next half mile. Run briskly, but not at top speed.

Without question, one of the best exercises in the world for girls is running. It contributes for one thing that elasticity without which grace is impossible, and spurs every bodily function to its appropriate duty.

Other things being equal, the girl who knows how to run, and does run, will outclass in general attractiveness the girl who does not. She will carry herself more gracefully. Her pose will be easy; she will be better set up, and generally better able to take care of herself in society or out of it.—N. Y. Sun.

### Human Nerves as Weather Indicators.

Now that confidence has been lost in the moon or the special appearances of the clouds at night with regard to the moon, as indications of the weather we are to have, says the Medical News, there is need of something else on which to base predictions.

It quotes a writer in the New York Independent, who, describing a summer's day in the country, says: "The best rain prophecy that I know is nerve irritability. If the boys are easily provoked (myself also), there is likely to be a shower." Commenting on this, the Medical News says:

"Here is a weather prophet with ideas worth considering. Some time it will come to be realized that many of the pains and aches that immediately precede and accompany damp weather are not due to rheumatism, nor to the rheumatic diathesis, but are just plain every-day irritability consequent upon some change in nervous conditions which are caused by a drop in the barometer perhaps, or perhaps the hygroscopic variation in tissues which follows a change in the atmospheric humidity. Old people become walking barometers in their power to portend storms, because the lessened elasticity of their arterial and vascular system prevents or at least hampers those changes in the peripheral circulation which would com-

penate for variations in barometric pressure. Whenever an injury has taken place around a joint, this same state of affairs proclaims itself even in comparatively young subjects. All signs, however, of dry time, so that the human barometer, like most other weather prophets, proves unreliable when it is most needed. It is probable, however, that a careful study of human feelings would enable the would-be weather prophet to prognosticate weather conditions with more assurance than any empirical study of the moon and cloud conditions."

### Cold Waves.

The cold wave, so much dreaded by most people, is really a blessing in disguise. It charges the atmosphere with fresh oxygen and a surplus of free electricity, which produces a most exhilarating and beneficial effect upon mankind. Torpid energies are aroused, physical vigor and resistance increased, and the cold wave is a cold wave to such extent that any incidental damage is more than made up for.

The American climate has always been recognized as a strong factor in causing the aggressiveness and enterprise which have lifted our people into the first rank among nations and made us commercially supreme. The cold wave, with the results of increased energy and vigor, is a meteorological phenomenon peculiar to this country. The chief of the weather bureau at Washington explains the origin of this wave.

It appears that with a high-pressure system, rotating with great velocity, large volumes of cold air are driven down from above the clouds, so that the cold wave is "homemade," being simply a product of motion. The system of motion originates in the northwest, but the cold air comes from above the clouds.

The cold wave is not only useful for its beneficial effect upon the human system; but as a cleansing and purifying agency. It dissipates the deadly carbonic acid gas, the product of respiration and combustion, and the foul effluvia of decaying matter, increasing atmospheric circulation generally and thereby relieving stagnation.—Medical Brief.

### Domestic Hints.

#### SALTED ALMONDS.

Blanch the almonds in boiling hot water. Melt a tablespoonful of butter, and let the almonds stand in it an hour. Put a tablespoonful of salt into a dish, stir in the nuts until all are lightly covered with the sugar, and then set the dish in a warm oven to brown delicately. More or less salt may be used, according to taste. Peanuts are salted in the same way, except that they do not need blanching, as the brown hull comes off easily.

#### PEPPER SANDWICHES.

Remove all the seeds from a green pepper, chop the pepper very fine, mix in a tablespoonful of butter. Do not allow it to brown. Add a dash of salt, and when cold spread between thin slices of bread minus the crust. Grated American cheese may be placed on the top of the pepper layer with happy results. These sandwiches are said to be especially nice with cold meat.

#### CRANBERRY FRITTERS.

Beat one egg thoroughly and stir it into 1½ cups of milk, add one tablespoonful of sugar and one cup of flour in which has been sifted one teaspoonful of baking powder. When well mixed stir in one cup of thick, rich cranberry sauce, drained with sugar and salt, and a few drops of brown sugar. Pour the mixture into a hot, buttered skillet. Brown very lightly and serve with butter and powdered sugar.—Good Housekeeping.

#### CHOCOLATE CUSTARDS.

To two cups of milk add two well-beaten eggs, two slightly rounded teaspoonsful of cocoa, three level teaspoonsful of sugar, and one-half teaspoonful of vanilla flavoring. The cocoa should be mixed with the sugar and dissolved in half of the milk heated, and when this has cooled a little add the other ingredients and pour into cups. Set the cups in a pan of boiling water and bake in a moderate oven.

#### CREAM SAUCE FOR PUDDING.

Beat a piece of butter the size of an egg with powdered sugar until it is light cream. Set to one side. Put a cupful of boiling water into a small saucepan and stir into it one teaspoonful of flour mixed with a little cold water. Cook until clear, smooth and the consistency of the starch. Take up the butter and mix it with the butter and sugar mixture, and while one beats it energetically let another pour into it, slowly and evenly, the hot flour sauce. If the beating is not interrupted, the whole sauce will rise in a light, foamy froth. Season with sherry, vanilla, nutmeg or brandy, as preferred.

#### Hints to Housekeepers.

Most healthy babies enjoy a good sozzle in a bathtub, but once in a while one runs across a youngster who fairly loathes the scrubbing process with three silk cloths and his bathtub unless he can have the washrag to play with. If he can have that, he is happy; if not, he howls. His mother is wise enough to accept the situation, and has hit on the happy inspiration of hemming a little square of Turkish towel for his individual use. This he uses indifferently on his toes or his mouth, or cleans his tub with it, but his mother says that it is his own rag and his own tub, and she is not going to interfere. So the baby scrubs and sucks and chews his washrag and mops the bathroom floor and it is all right and his mother and the bath is a great success. Now, isn't that a great deal better than trying to break the baby of his silly little notion.

Carpeting which have become spotted by having liquids, etc., split upon them may be freshened up by the following method: Go over the surface with a cloth dipped in warm water in which ammonia has been put. Painted or enameled furniture is washed with ammonia water or soap and water; polished mahogany or other polished furniture or iron bedsteads, etc., may be cleaned with ammonia water. This he uses indifferently on his toes or his mouth, or cleans his tub with it, but his mother says that it is his own rag and his own tub, and she is not going to interfere. So the baby scrubs and sucks and chews his washrag and mops the bathroom floor and it is all right and his mother and the bath is a great success. Now, isn't that a great deal better than trying to break the baby of his silly little notion.

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buy dim or limp fish. A fish should be kept very cold until time to cook. It should then be washed as little as possible in ice cold water. Too much water destroys the delicate flavor.

The hair will be worn high for evening and ornamented with dainty wreaths of leaves, garlands of tiny pink or white roses, sprays of golden beads, agitates of feather, lace or narrow-gauge ribbon. Of course the hair must be in the diamond butterfly, star, sun or arrow will know what to do with it in the hair.

To clean gloves, take your five cents' worth of gasoline (nearly a quart) and pour one-third of it into a basin and begin your glove washing. It is better to wash three or four pairs at one time. Wash them all through the first gasoline, which you will find pretty black when you get through. Then pour out a second portion and wash all the gloves again, rubbing the fingers carefully and thoroughly so as to get all the dirt out. After this washing they are not very dry, give them another rinsing with the remaining portion of the gasoline. Then spread the gloves out on a towel or hang them on a line near the window, and when nearly dry put them on the hand, so as to prevent shrinking.

To cook sweet potatoes, Southern style, boil them until tender. Pour off the water and stand the uncovered kettle on the back of the range to steam. When ready to brown, peel and cut in lengthwise slices. For a pint of sliced potatoes, put two tablespoonsful of butter in a frying pan. When very hot, lay the potatoes in, sprinkle two tablespoonsful of sugar over them, pour two tablespoonsful of vinegar over lightly and cook until brown. Sweet potatoes are richer with two cookings, even when tried in deep fat.

Bed hangings are again in fashion. The daintiest and lightest of colorings are used for them, from white madras nets, tulle, muslins, soft Indian silk, to brocades in all their exquisite pastel shades. There are also the aesthetic and quaint colorings, both of design and dye, or the more conventional patterns that will retain a modicum of popularity. The textures for the hangings are beautiful. Tulle and lace are delightful with draperies of the same. The French white work is exceedingly decorative, with curtains of a matching material. Japanese fabrics are always popular and can be had in pure white with a knotted fringe, or in tan or tea-colored silk edged with lace of the same shade. Bedspreads and pillow-shams of lace over colored linings tone with the hangings. Sprays of old hand-woven linen with borders of antique lace are being used again by those who are fortunate to possess them. Many shops are showing entire spreads of Renaissance and Marie Antoinette lace, which go well with the flowered creases. But these are costly. There are countless other pretty and inexpensive designs to be seen.

One reason that an omelet is so often a failure is the use of too many eggs. The more eggs the more difficult the matter of turning and folding. Few eggs are all that should ever be used at one time.

Copperas makes a capital disinfectant for a kitchen sink or place needing a thorough cleansing. Take half a pound; add two quarts of boiling water, and when the copperas is thoroughly dissolved, flush the pipes with the solution.

## Fashion Notes.

Children's hats are as picturesque as they are becoming. The poke shape is perennially popular. This year the furry beavers, velvets and soft felts are combined with ruffled and shirred liberty gauze in all kinds of artistic shapes. White and pale blue or pink are often seen, as nearly all girls and boys of good breeding are dressed in all white, winter and summer, with delicate shades of color allowed for street and carriage wear. Some dark hats, a few all black, are shown. A very pretty felt bonnet in a pale color shade is trimmed with gold and silver beads, and a small cluster of green and black velvet grapes. The large ties are of silk liberty gauze of a lighter shade of green.

"One of the prettiest combinations is ermine with squirrel. The latter fur has not the prestige that it once enjoyed, but it is still considered the most elegant of furs. It is especially well adapted for an elegant appearance. Mink and breitchswanz are another good combination.

"Why furs should be mixed up indiscriminately as regards color when the vague of one color is so widely exploited in gown and hat, is something of a mystery. The importers' windows are filled with things to match. The great popularity of mauves and violets is rivaled just now with the growing vogue for all-gray combinations, in gowns, furs and millinery. The too wide variety of shades from black to the palest pearl and silver, and there is a notable absence of the cold and unsympathetic shades of gray. This is a dignified color, suitable always for matrons' wear, and is the color of all others to bring out the sheen and beauty of white hair. It is also a color extremely coming to youthful beauty of the richly colored types. A red-haired woman is often charming when gowned in gray, and as for chinchilla, it seems almost to have been made for women of that type.

"As a whole, the season's styles are more variegated than usual, and allow for individual tastes as they have never before.

"A white furry beaver bonnet is trimmed with a cluster of white ostrich tips and is lined with white crepe de chine. Very wide strings of ermine are trimmed on the ends with ruffled edges, with frills of the same. With this was shown a long coat, white cloth, covered with a heavy gupure lace. There was a cape collar which did not meet by several inches. This was bordered with ermine, and was held together with three silk cords and small pearl buttons. Ermine collar and cuffs.

"The black silk coat, once omnipresent, has suffered an almost complete extinction. Even covert coats are out, except for morning wear and shopping. The materials now in favor are velvet, heavy smooth cloth, zibeline and fancy cloaking. Fur coats are always good style, and more of them will be worn this year than ever, for the reason that the many fantastic combinations allowed will permit many women to have their half-worn fur garments made over at small expense with the latest fashions. One of the best combinations of this year will be fashionable next winter, so, after all, there is no special economy in having garments made over.

"The new coats and wraps in cloth, velvet and peau de sole are handsome and substantial. Practically all are made in the three-quarter length, against the very long coats worn last year. This season's coats are larger and looser, and their sleeves follow the prevailing fashion of extreme amplitude. A large number of light-colored wraps are seen. A very elegant wrap of deep cream-colored cloth faced with white tulle, the same color, the satin being veiled with accordion-plated brown chiffon, with a border of ermine lace. The coat is trimmed around the shoulders, upper sleeves and skirt with alternate rows of narrow and wide brown velvet ribbon. There is a fur-down collar of white, with long stole ends of brown chiffon striped with ermine lace. The large kimono sleeves are deeply bordered with mink.

"Silk lace, velvet, and mouseline waists will be quite popular this winter. Two-piece suits are to be worn extensively, and these have made one or two waists almost indispensable.

"Dancing and ball gowns are to be made in all the lighter fabrics. Tulle spangled with crystals makes a becoming costume. The prisms are fully an inch long in some instances, and fall in showers over the tulle skirt. These gowns are bought in two pieces—a skirt, and enough for a bodice. Crystals mixed with silver paillettes also make a pretty frock upon the same order. The spangles are carried out in a lace design in cross rows upon the skirt, forming a most striking method of decoration. Robe gowns come in jet and certain colored spangles, and remain in favor. French ball gowns have water clusters of silver paillettes, as well as single spangles in water size. The former create the greatest brilliancy. Rings of fine spangles with open centres upon tulle, or the same rings with their centres filled up with a chiffon spot or a velvet one, are also seen upon French models. These open designs are especially youthful. The and four shades of any given

color—rose-pink, opal-green, pastel yellows and blues are all becoming.

"A theatre gown for a young girl of pale blue crepe de chine, is trimmed with very fine silk passementerie of the same color; yoke and undersleeves of white embroidered mull. The skirt is laid in tiny perpendicular tucks around the hips and is finished at the bottom with five circular tucks of graduated width.

"A pretty frock can be constructed of white crepe de chine elaborated with Mechlin lace. Five gores, with darts over the hips, give stylish shaping to the foundation skirt, which flares at the lower edge, affording a measurement of about 3½ yards in the middle sizes. Two circular flounces, shirred or gathered and finished with tucks, form the outside skirt, the lower one measuring about 4½ yards.

"A high or round neck may be used, with the blouse waist, which is tucked in bayader style and gathered where it joins the round yoke. A back closing is lavishly affected, and a fitted lining gives support. Close caps, shirred to form frills and ornamented with tucks, and plain blouse sleeves are provided, and may be used together or separately. A ribbon belt is worn.

"Collarless bodices are taking the lead where there is any dressiness attempted. This feature particularly divides the two styles of costumes, while it strictly imposes itself upon the fine creations of the dressmaker's art. It softens and beautifies the face very much to have lace fill up the rigid collarbone space, as it is a very great charm to be able to wear the neck quite uncovered on occasions, except for the jewel dressing it may receive. Debutantes' gowns are to be strictly carried out in this manner; the neck line to be observed is one of three, either a point or V-shape, a shallow E-shaped square or a low circular line. These lines bear relatively upon the features and shape of the face. A long oval face is shortened and improved by a square opening at the neck, a very round face by the pointed opening, while a face with the nose a little too prominent is greatly improved by the circular opening, with its tendency to broaden out.—New York Evening Post.

### The World Beautiful.

Lillian Whiting, in Boston Budget.

"Be ye doers of the Word and not hearers only."—St. Paul.

"What is a church or parish for? No doubt they are, in the first place, learners, disciples, students together of the truth of God, listeners at the lips of the Master for His revelations. But unless there is continually issuing from the heart of their discipleship, true apostleship, unless the best souls among them keep fresh and alive the outward impulse, the consciousness that their church and they exist not for themselves, but for the world, how their church life grows dead. . . . Every life which comes to its best begins with a sort of loose expansiveness; it is drawn inward till it reaches an almost selfish concentration; then it opens with a larger and finer movement to embrace mankind."—Phillips Brooks.

President Patton of the Princeton Theological Seminary, in his address at the centennial services of the historic Presbyterian Church in Washington, the "Presidents' Church," consecrated by the presence and the memory of Lincoln.—Dr. Patton referred to the Christianity of the day as "a dire disease," and in his discourse he said: "We are not living in a time when the old theology interests very many people, the religion of today is not the shorter-catechism Christianity on which I and some of you were brought up. Tonight I am going to talk about this new Christianity, this dire disease, and its symptoms. 'One of these symptoms is marked indifference in spiritual matters and a marked attention to the social side of religion. The regeneration of the soul is being superseded by the regeneration of the society.' Dr. Patton sees as 'a dire disease' of Christianity the tendency to what he terms a 'marked indifference in spiritual matters' and 'a marked attention to the social side of religion.' He arraigns the present state of things as a time in which 'the regeneration of the soul is being superseded by the regeneration of society.' It is a little difficult to quite understand an attitude of disapproval of the Christian spirit, which, as Phillips Brooks once said, 'flowers into the outward impulse which comes to complete its life.' It hardly seems that the regeneration of the soul could be superseded by the regeneration of society, but, rather, that the regeneration of the soul is completed by the regeneration of society; that it finds its higher meaning, its fuller fruition, in thus endeavoring to communicate the divine impulse it has received. 'Freely ye received, freely give.' Is the divine command. 'As ye have, therefore, received Christ Jesus, our Lord, so walk ye in Him.' How, indeed, is one to obey this counsel save by doing all that he can, by sharing with his best with every human being with whom he comes into relation so far as the sharing is possible? What is the supreme end and aim and purpose of human life if it be not mutual helpfulness? What is Christianity if it be not mutual helpfulness and love? Surely a mere ecstasy of emotion is not the completeness of the Christ life. It is good, if it refines and exalts and ennobles the quality of life and sweeps it onward into the region of sublimer endeavor. Otherwise, what does it avail? Christianity begins with spiritual culture; but this spiritual culture is not to be held as a mere decorative gift and grace, but a power,—the mightiest, the most irresistible power in the universe, to use wisely and prayerfully and to consecrated ends, and these ends are to communicate the greatest significance to life. 'It is the most truly thorough learning which begins by-and-by to be dissatisfied with its own learned luxury,' said Phillips Brooks, and to desire that all men should have the chance of knowledge. It is the most true refinement that believes in the possible refinement even of the coarsest man. . . . I hold it to be one of the most beautiful and re-assuring facts in all the world that the purer and finer any good attainment grows, the more it comes into the necessity of expansiveness. It is the crude and half-formed phases of any good growth which are selfish and exclusive. It is the half-cultivated people who guard their feeble culture by arbitrary lines of separation. The heart of any good thing is Catholic and expansive. It claims for itself the world. It longs to give itself away and believes in the capacity of all men to receive it."

Surely, "the regeneration of society" which Dr. Patton sees to deplore is the very fruition of the Christian life of society. It is the supreme end for which the individual Christian exists. For what other purpose did Jesus, Himself, come to the world? Surely, every Christian life that works itself out to fuller and more divine completeness realizes the divineness of brotherhood. It is of less than no consequence whether one maintains himself in the scenery and enjoyment of luxury; it is of the most momentous consequence if he can reach out a hand to meet, however feebly and imperfectly, some human need; if he can lessen, or can share, some human suffering; if he can bring, even the least measure of relief to trial and sorrow. Unless Christianity, Christian culture—fulfills itself in such

fruition as this, of what avail is it in life? "As ye have received Christ Jesus, our Lord, so walk ye in Him," the apostle correlated. They form an inevitable sequence. "The power of expansiveness," said Phillips Brooks, "is the test of every Christian life which works itself out to its completeness. There is the first easy instinctive human brotherhood; there is the drawing in and retirement of the nature on itself, with any strong experience, most of all with the strongest of all experiences, the occupation of the soul by Christ; then there is the large expansion of the strengthened soul, as it longs for the complete society, the brotherhood with man in God. It is the beating of the great spiritual pulse. It is the systole and diastole of the heart of a whole man's history. It is the succession of man's citizenship with man, man's discipleship to Christ, man's apostleship to men for Christ, succeeding one another."

Hotel Dewey, Washington, D. C.

## Brilliantes.

"I have no skill to do," he cried, "But see the breach within the wall! He grasped a bugle at his side And blew a battle-call."

They followed where the bugle rang: They smote the crumbling wall to ground— Foremost within the breach he sprang, The man the boys had found. —Blanche Trenner Heath, in November Appointments.

An empty room, and yet how full Of her since she has gone; No trifle but becomes a thing For thought to dwell upon.

Their silence misses her, And moves on noiseless feet, Feared to wake some memory The brave heart could not meet.



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## Poetry.

### THIS IS GLAD THANKSGIVING.

Here's a song to banish sadness,  
And the purest pleasure bring,  
Let it fill our hearts with gladness,  
Sweet as that the angels sing;  
Man can reach a note of beauty,  
When he would the right obey,  
For the path of faith and duty—  
Leads us to Thanksgiving Day!

Here's a song of praise and gladness,  
For God's gifts so full and fair,  
For the banishment of sadness,  
For the loss of grief and care;  
For the joy that fills with beauty  
All the hours in their array,  
So we'll find the life of duty  
Brings each day Thanksgiving Day!

WILLIAM BRUNTON.

## MEMORY.

I climb the hill; from end to end  
Of all the landscape underneath,  
I find no place that does not breathe  
Some gracious memory of my friend.

No gray old granite, or lonely fold,  
Or low morass and whispering reed,  
Or simple stile from mead to mead,  
Or sheepwalk up the windy wold.

No hoary knoll of ash and haw,  
That haunts the latest linnet thrill,  
Nor quarry trenched along the hill,  
And haunted by the wrangling dail.

Unwatched, the garden bow shall sway,  
The tender blossom flutter down,  
Unloved, that beech will gather brown  
This maple turn itself away.

Unloved, the sunflower, shining fair,  
Ray round with flames her disk of seed,  
And many a rose carnation feed  
With summer spice the humming air.

Unloved, by many a sandy bar,  
The rook shall babble down the plain,  
At noon or when the lesser Wain  
Is twisting round the polar star.

Unloved, for girl the windy grove,  
And faint the haunts of him and crake;  
Or into silver arrows break  
The sailing moon in creek and cove.

Till from the garden and the wild  
A fresh association comes,  
And year by year the landscape grows  
Familiar to the stranger's child.

As year by year the laborer tills  
His wonted glebe or lops the glades;  
And year by year our memory fades  
From all the circle of the hills.

—Alfred Tennyson.

**LITTLE MISS SNOW, SPINSTER.**  
Little Miss Snow is on the trot  
From end to end of the village street,  
Whenever you open the blind you meet  
Her sunny face and her smile so sweet.

I wonder if she is here to stay,  
To visit the sick and poor away?  
A beaded bag dangles down beside  
The trim little figure trotting along.

I wonder if it's unwise or wrong,  
To ask—did she ever hear lover's song?  
Perhaps—but then it was long ago,  
For now she is just our little Miss Snow.

Every door is open to her,  
She with her step so short and quick,  
Along the walk for the poor and sick,  
She with her way so light and mild,  
Soothing the grown folk and the child.

Under her little gray cloak is hid  
A heart that's tender and good and true;  
Under the peak of her hood of blue  
A pair of clear eyes look out at you.  
And she smiles when passing, whenever you  
Find her face when you look beyond the blind.

The tap of her fingers is soft and low  
When she comes to the door where sick folks  
Are,  
She never brings hurt, or fret, or jar—  
Nothing to hurt and nothing to mar—  
Only quiet, comfort, release  
From brooding pain—and her medicine's  
peace.

Many a day and many a year  
Out of the shadow she comes to delight,  
Out of her cot that is cozy and white,  
Out of her garden in the dead of the night,  
A smile to drive away sorrow and sting.  
Little Miss Snow, our spinster sweet,  
Tender and good and true—and great!  
Open her door and wide her gate,  
Ever on hand, early or late.

You scatter sunshine wherever you go,  
Dear little spinster, little Miss Snow!  
—Horace Seymour Keller.

**MODERATE AMBITION.**  
I'm jes' a-keepin' even; which is I don't purty good.  
I haven't made the fortune that I used to hope I  
would.  
Haven't caused the rumour of fame o'er distant  
kiss to sound,  
But kin allus face the music when the landlord  
comes around.

I've had my share of sunshine an' I see the  
flowers smile.  
Have the rheumatiz, but only for a little while,  
An' when I come to quit this scene of hope an' pain,  
I'll be a-keepin' even, which is I don't purty good.  
—Washington Star.

**I LOVE THEM BOTH.**  
When Mabel sings, so soft and clear,  
Bright visions of heavenly beauties appear,  
And winsome Sylvia, as she trips  
With grace from foot to fingertips,  
I love them both, none can deny.  
I am their father—that is why.

—Judge

## Miscellaneous.

### A Got-up Thing.

Mary lifted her head. Her face was very white, and she clenched her hands to prevent them from trembling as she met the old doctor's eyes.

"Yes, I shall marry Captain Tenby now," she said, unsteadily. "He—he spoke last night, and I—"

She got up suddenly and turned from Dr. Grey's searching look.

"I said yes," she added abruptly. "I remembered—it breaks my heart to remember how father wished it and how obedient I have been, and now—his last wish—oh, I must. It will make him so happy, and I—I shan't have many more chances of making him happy."

Her voice broke, and the doctor got up and going over to her put his hands on her shoulders.

"But this young man, Mary," he said. "You think you will be happy with him?"

Mary hesitated. Then for her father's sake she acted a lie.

"Do you think I shall not?" she cried. "Surely he's all I could wish? Oh, yes; I—I shall be happy."

Dr. Grey looked dissatisfied as he turned away. He was prejudiced, no doubt, but he did not like the Hon. Arthur Tenby, and in his eyes he was not a fair match for the girl who would soon be the mistress of Treherne Court. He frowned out of the window at the stretch of lawn, and the empty beds upon it. A few weeks ago they had been gay with summer flowers, and now a change in the weather had brought all the desolation of winter upon the garden; it reminded him of the change that had come over the house in as short a time as it took to turn a leaf.

She was staring out of the window, too, seeing ugly things on the patch of grass—she saw Geoffrey Kaye, thrown from his horse, dead or dying on an empty road, and she saw the face of the man she was going to marry and behind it the face of the man she loved.

She shivered a little in spite of her resolve. Her marriage with Arthur Tenby had always been her father's fondest wish. He was of good family, the son of a lord, and marrying with him seemed a wonderfully good thing for adopted daughter of Geoffrey Kaye, even though she would be rich when he died.

Geoffrey Kaye had adopted her wholly when she was three years old, and for nearly twenty years she had been a daughter indeed to him. Now he had been suddenly thrown from his horse and was dying slowly in the great house, and Mary, remembering his wish to see her married to a title, had accepted Arthur Tenby because in a week or so—perhaps in less—she would never have another chance of giving happiness to the old man who had been in every way a father to her. She had told him the same night what she had done, and the smile that had flashed into his face had seemed to her reward enough, until next day, and then with the daylight came the memory of another man, and that morning life seemed as ugly as death.

Dr. Grey turned from the flower beds and looked at her.

"Geoffrey would only want it if he thought you would be happy," he said. "You know he loves you as much as if you were his own daughter."

Mary faced around quickly.

"Oh, I know—I know," she cried brokenly. "But I am—I shall be happy."

Dr. Grey pulled his beard. A week ago he had seen Mary and another man—Dick Marlone—together, and their attitudes told him something that Mary would not have confessed for worlds. He remembered it now, and that Dick was poor; and he frowned again.

A few minutes later some one came from the sickroom to tell him that Mr. Kaye was rousing, and he and Mary went in together.

His keen eyes told him at once that the change he had expected had occurred. Mr. Kaye was sinking fast. His hands trembled restlessly over the counterpane. Mary bent over him.

"The will," he cried feebly. "I want to sign."

He pointed to a table where some papers lay. Dr. Grey brought them, and a pen and ink, and putting them before him held him up while he scratched his name feebly on the parchment.

Dying men have strange fancies sometimes, and he had been Mr. Kaye's fancy during the last few hours to make a fresh will and to do it without a lawyer. No one could understand why, but he had been unaccountably restless until it was done. Now his dying eyes stared dimly at his feeble signature, and his fingers dropped the pen.

"Read it," he said slowly, and Dr. Grey obeyed.

It was apparently the same as his other will, which was at the moment in his lawyer's office, and this had only been done in order to humor a dying man.

"The last will of me, Geoffrey Kaye," the sick man repeated slowly. "Yes—everything—to my daughter, Mary—everything to my daughter, Mary."

He fell back and stretched out his hand.

"Take it away now," he said. "Put it in my desk drawer, shan't be long now."

A few days later Geoffrey Kaye was dead, and a few days later still Mary sat facing a small group of people in the library in Treherne Court. She looked whiter than ever in her black mourning frock, and her eyes were heavy and red rimmed.

"I suppose it is all right," she said wearily.

"If Mr. Grey is satisfied I shall not dispute it. Oh, I couldn't dispute it."

The woman who faced her lifted her head boldly. She was a dark, thickset woman, as unlike the late Geoffrey Kaye as it was possible to be. Yet, nevertheless, there seemed to be no doubt that she was his daughter.

Mr. Grey, the solicitor, and old Dr. Grey had tried to find some flaw in her story, but it seemed right enough.

Twenty-five years ago Mr. Kaye's wife had deserted him, taking with her a two-year-old baby. They had been very poor, and Mrs. Kaye, hated poverty as fiercely as foolish, empty-headed women do sometimes hate it. It was Mrs. Kaye's one strong emotion—hatred of the poverty which kept her from the luxuries of life, and she left it for what she stupidly believed was far better.

When Mr. Kaye got his divorce she married again, only to plunge some years later, when her second husband had run through his fortune, into poverty deeper still. Apparently it broke her heart, for she died leaving her child to the care of her husband—an adventurer, swindler and thief.

How they had lived since her mother's death she did not care to say, but she had been brought up by some Court by accident (so she called them), had probably tried to blackmail Mr. Kaye, and would no doubt have tried again had he not met with the accident. She had seen him and spoken to him, she said, and he had owned her as his daughter.

Now she claimed the estate; and both Mr. Grey and Dr. Grey were disheartened and troubled, for the last will Mr. Kaye had made had put everything which played straight into the hands of the woman before them, for he had distinctly written his "daughter" instead of his "adopted daughter," as he had meant to do. His other will each had "adopted" prefixed but this last—this strange fancy to rewrite his will—had undone everything.

And it was absolutely unnecessary—unless, indeed, the memory of the past had affected him and made him wish to renege his own daughter.

Yet they could not believe that, for he had not mentioned her—had not even hinted at her existence—before he died. It was Mary's name which had been on his lips.

"Well," said Mr. Grey to the claimant, "if you can prove that you are indeed Mr. Kaye's daughter, I shall be glad to give you a clear case. But you must prove it first."

A week later the news was spread in the town that Mary was an heiress no longer—but a poor girl with her living to get. The Hon. Arthur Tenby could not realize it—could not believe that the girl who had been so obedient to him, who was the prettiest girl he knew, and it was so hard to give her up.

Still, he did it as gently as he could, in Dr. Grey's house, where she had gone to live for a while, and he was such a pitiful thing, he thought, that people so well suited to each other should have to part, and at one moment he was almost tempted to risk everything—to throw away his ambition to marry an heiress and fight poverty with Mary.

The feeling vanished in an instant when he remembered his embarrassed affairs, and he told her outright that he could not afford to marry yet—that they would have to wait for years, perhaps forever, and Mary decided at once to wait forever.

The odd part of it was that Mary did not care. After he had gone she sat listlessly over the fire. What would become of her she could not tell; it broke her heart to think. She had not a friend in the world except Dr. Grey, and she could not live forever upon him. She would have to go out to earn her living in some way, though how she did not know. Life seemed horribly hopeless, and she almost wished she lay dead beside the old man whom she had loved as her father.

She was shaking with sobs when the door opened suddenly and a young man entered. He was tall and straight, with a clean-cut, handsome face.

"Dr. Grey said I should find you here," he began, and then stopped.

She got up listlessly, trying to stop her tears; and then an odd thing happened considering she was a penniless girl whom nobody seemed to want.

Dick Marlone went up to her and held out his hands.

"You know what I want to say," he cried. "You know I love you and have done so for a long time. Now you are poor and Captain Tenby has gone I can speak. You know—Mary you know I love you. Will you be my wife?"

Mary looked up and gave a little quick sob of happiness.

"Oh, Dick, I believe the will has done me some good after all," she cried.

The odd part of it was that the woman who called herself Claudia Kaye was not Claudia Kaye at all, and that Mr. Kaye had known it and had handed full proofs of the death of his child twenty-two years before to Mr. Grey before he died. Then he had said, if Captain Tenby was the fortune hunter Dr. Grey said he was, it would prove him and save Mary a lot of unhappiness.

And it did. A very clean and affectionate household pet. He is now a large cat, of a regular "lion tawny," with a white breast and white hind feet, and showing faint tiger markings of a darker buff, particularly in his tail and legs. The most remarkable thing about him is his fondness for vegetables.

He comes to my side at breakfast to beg for a doughnut, which he eats most daintily from my fingers and then goes over to Mrs. W. and finishes her saucer of oatmeal porridge for her, after she is satisfied. He likes Boston brown bread and baked beans from the garden, and he is extravagantly fond of sweet corn, which he takes from my fingers, a kernel at a time, and after we have cut of the corn in the usual way he will polish off all the cobs, stealing them with his paws while he licks them clean. His taste for vegetables is certainly not ordinary "cat instinct."—Forest and Stream.

less, after man of the line drops out, until finally one man, or two, have the animal cornered and drive it into the box.

But a shifting box can be used for all animals; for instance, if you want to shift them you have to catch them with an arrangement like a big soap net.

This net is made with a hoop a foot or two in diameter, and a net, made of netting, but of burlap; a deep burlap net. The net is to shift monkeys, when he walks in among them, a rubber coat, and a rubber cap with a havelock hood that covers his neck and all about his head but his face, and he wears rubber gloves; all man protection, of course, so that the monkeys that might jump on him can't scratch or bite him.

"When the man has got a monkey where he can scoop him he brings the net or bag down over him and then, with the handle of the net, he shifts the monkey into the box, twisting it around near the hoop and over the monkey, so that the monkey can't get out and can't scratch.

"Birds of smaller kinds, when they are to be shifted, are caught with a net; but in shifting big cats, like tigers and eagles, they are caught with a big net of burlap, something like that used for monkeys, so as to avoid injury from their claws and talons.

A shifting box again, but of a different kind from those used in shifting animals, is sometimes used in shifting alligators and crocodiles. The box, of suitable size and shape, is placed on its side in the pool, with the open side toward the alligator, and then men get behind it and shove it over toward him.

Fluffy gets the alligator over against the side of the pool, where they can work him into the box. Then they right the box up and put slats across the top. But the commoner way, when they want to shift an alligator, is to rope it.

They probably there are some cowboys attached to the show, and if there are, they get them to lasso the alligator's head, so as to hold his jaws tightly together, so that he can't bite. They are likely to get two lassos over his head, one from either side, these lassos serving them to hold the head steady while they close the net, as well as to hold its jaws tightly closed so that it can't make a lot of trouble swinging its head around. And then, with the head and jaws thus secured, they go to roping him.

While they are doing this they have one man, sometimes two men, hanging on to the end of the alligator's tail to keep him from swinging that around; a big alligator could easily break a man's leg with it.

"They get the rope around the alligator's body and legs until they come down to his tail, and then they take a turn around the end of that and draw the tail around to the alligator's side and secure it there and so make it powerless. But after the roping of an alligator for shifting there is used a stout scantling that is laid across the alligator's back, and is long enough to project a foot or two at either end, beyond the alligator's head and extended tail.

"They get some of the ropes around the alligator around the scantling too, and when they come to the alligator's tail they rope that to it securely. The tail is thus held perfectly secure, as is the head at the other end, and when the time is complete, they lift the alligator up and men get under the projecting ends of the scantling, two at either end, at the alligator's head and tail, and walk away with him."—N. Y. Sun.

**How to Make a Maltose Cross.**  
The gentleman who likes to ask questions was visiting Miss Abbott's kindergarten. Finally, says the Christian Register, he turned his attention to "Johnny."

"My boy," he said, "do you know how to make a Maltose cross?"

"No, sir," "Johnny" answered, promptly.

"Good!" exclaimed the visitor, delighted to learn that in "Johnny's" case, at least, the work of hand and brain were going forward together.

"How would you go about it?"

"Why, jes' pull her tail," said "Johnny"; "that's all."

**A Vegetarian Cat.**  
When one of my little granddaughters was visiting me, a forlorn, half-starved yellow kitten wandered into the yard and appealed to her for comfort. She fed him, for which he seemed thankful, and he immediately attached himself to her and stuck to her about as unobtrusively as he had evidently been found where he came from, and soon made himself an important member of the family. He proved a good mouse, and paid close attention to the pantry and closets, and a very clean and affectionate household pet. He is now a large cat, of a regular "lion tawny," with a white breast and white hind feet, and showing faint tiger markings of a darker buff, particularly in his tail and legs. The most remarkable thing about him is his fondness for vegetables.

He comes to my side at breakfast to beg for a doughnut, which he eats most daintily from my fingers and then goes over to Mrs. W. and finishes her saucer of oatmeal porridge for her, after she is satisfied. He likes Boston brown bread and baked beans from the garden, and he is extravagantly fond of sweet corn, which he takes from my fingers, a kernel at a time, and after we have cut of the corn in the usual way he will polish off all the cobs, stealing them with his paws while he licks them clean. His taste for vegetables is certainly not ordinary "cat instinct."—Forest and Stream.

**Notes and Queries.**  
THE NEW METAL.—"Dean": German papers state that the French press publishes news with reference to a new metal, which is said to be based upon an interview which a representative of the Paris had with Mr. Edward Mallet, of London. The new metal is called "sodium," and is said to possess a very light specific weight and excellent resistance. It is as hard as steel and of the color and brilliancy of silver. The main component part is salt (which is perhaps sodium chloride) and the metal sodium may be the chief component part. It is said to be especially suitable for ship armor plate, as it does not rust and is more resistant than the armor plates now in use. It is also alleged of the box and catches it at the top.

**Moving Wild Beasts.**  
In every menagerie, said an old showman, "they use, in shifting animals about, what they call a shifting box."

"You say so well walk to the cage of the royal Bengal tiger if you want to shift him and take him by the scruff of the neck, for he might not take it kindly; and the gentlest animals might harm themselves if you tried to handle them. So if you want to move an animal anywhere you get a shifting box."

"A shifting box is practically a small cage, barred at one end, and having the middle section of bars joined top and bottom to form a gate, which can be slid upward in grooves at the top. The box is backed up to the door of the big cage, which is then opened, as is also the door of the shifting box, and then there is a clear opening for the animal from one to the other. When you have got the animal in the box a man standing on the top of it drops the door of the box and catches it at the top."

"Then you move the shifting box over to whatever other cage you are going to shift the animal to, and back the box up to the cage, and reverse the operation, getting the animal now out of the shifting box into the cage."

"Sometimes it is hard work shifting animals, sometimes very easy. To get them into the box you may have to drive some, and for some you may have to wait a long time. A common method in shifting animals is to skip the last feeding time for the animal in its regular cage and put the food for it in the shifting box. The animal is hungry and goes for the food there."

"The shifting box is used sometimes in shifting animals from one paddock to another, or from a paddock to a cage. In such cases the box is placed against a door or gate in one corner of a paddock, and then men carrying racks like shields in front of them go into the paddock and form a line across it, with the animal between them and the corner."

"As they advance into the angle of the paddock, and the distance from side to side grows

weights from twenty to twenty-eight pounds. The head is a kind of cluster of bulbs, and in all contains from fifty to sixty seeds. The seeds are allowed to dry, and are harvested several times a year, by the natives. When the net reaches the button factory it is cut into three slabs. In the process of cutting the buttons are drilled and counter-sunk. The buttons are then sent to the polisher, who uses the shavings and powder made in the drilling to polish them. Afterward they are sent to the designer, who traces on the buttons in indelible dye the designs needed. After receiving these outlines, if the buttons are to remain smooth and receive another coat, they are put into the dye, then they are put into a pressing machine fitted with dies of the pattern desired.

**AMMONAL, A NEW EXPLOSIVE.**—"Francis": This latest thing in explosives, according to Metal Industry, is powdered ammonium, mixed with nitrate of ammonia and put upon the market under the name of "ammonal." This explosive is said to be one of the surest and most known, as it cannot be exploded by friction or blow, while otherwise containing all requisites of an explosive. The fact that ammonium is not subject to accidental explosion, and is not subject to detonation, as it is not affected by frost, accidents which so often occur when thawing out frozen dynamite are not to be feared. The explosion is caused by an ordinary cap. Another important property claimed for ammonal is that it is not affected by moisture.

**THE KINDS OF LIGHTNING.**—"A. J.": The Etruscans of old believed in three kinds of lightning—one incapable of doing any injury, another more mischievous in its character and consequently only to be issued with the consent of a quorum of the gods, and a third carrying mischief in its train and for which a regular decree was required from the highest divinities in the Etruscan skies. Curiously enough, modern scientists, following the lead taken by Arago, who also described the varieties of lightning, are of the opinion that the three kinds of lightning in which the discharge appears like a long, luminous line, bent into angles and zigzags and varying in complexion from white to blue, purple to red. This kind is known as "dry lightning," because it sometimes divides in two or more branches before reaching the earth. The second differs from the first in the range of surface over which the flash is diffused. From this circumstance the discharge is designated sheet lightning. The third class differs so from the other two, that it is called ball lightning, that many meteorologists have denied its right to be treated as legitimate lightning. It neither assumes the form of long lines on the one hand nor sheets of flame on the other, but exhibits itself as a ball or globular lump of fire.

**Popular Science.**  
—A sand worm of the northern and western coasts of France seems to have a sense of time. If it is disturbed, it retreats, and M. Behn states that it makes green spots on the sand at low tide and disappears as the tide rises, and continued this course during fourteen days in an aquarium.

"Flowers out of the natural season are usually obtained by keeping the young plants in cold, dry houses, and forcing them later by heat and moisture. It is possible to give young buds premature development by exposing them to ether, and A. Maumene claims that such development is not only more rapid but more regular and complete."

A curious investigation by Alfred Binet of the Laboratory of the Sorbonne has revealed differences in the handwriting of the sexes. Numerous characteristics are traced—such as carelessness in the writing of women and firmness and simplicity in that of men—and an expert graphologist is able to give the sex of the writers of 141 addresses out of 150. The writing of old men resembles that of women.

—A summary of the progress of a quarter of a century in disposing of city refuse was given by Mr. F. Gooden in a British Association paper. Not less than 150 towns now use destructor works. In sixty-three of these the steam generated is used at electric stations, while forty apply the power to pumping sewage and three use it for the water-works. Numerous tests have shown that city refuse, when generated about one mile from a high pressure steam, smell and dust being practically banished.

The latest addition to American ornamental stones reported by Dr. George F. Kunz has received the name of Californite. It was first found about ninety miles from Yreka, Cal., where it outcrops for two hundred feet as a hard green stone of varying shades, and taking a high polish. The material, at first supposed to be jade, proved on analysis to be a massive variety of vesuvianite. The slabs are five feet square and two feet thick, and have been found, and the supply seems to be large. Similar massive vesuvianite exists elsewhere in California and in Europe.

In a recent case of mirror-writing a boy of seven or eight wrote unusually well, but in this singular reverse style, and some months later, after acquiring the normal method of writing, would return to his original style on becoming fatigued. Dr. C. D. Jones of Boston, in reporting the case, states that the anomaly seems to be more common in England than in America. In one group of 461 the percentage of mirror-writing was 1.1, but in many reported instances the specimens have proven to be merely those of poor penmanship. Various explanations of the peculiarity have been offered. It seems to be most common with mental disease, but has been observed in persons of normal mind, and, as an explanation it is that it is due to handedness and some preponderant influence of the left brain.

Extraordinary results are claimed for the Berlin process of Professor Mostek, which has been adopted in Vienna hospitals. Diseases of the bones causes cavities, like those in teeth, and cure is usually slow, patients often being disabled for many months or even years. Professor Mostek plugs the cavity with a melted mixture of iodolium, oil of eucalyptus and spermaceti. The patient is soon able to go to work, the antiseptic power of the iodolium arrests the disease, and as the cure progresses and new bone is formed, the plugging material is reabsorbed entirely without pain. Among the cures is that of a Serbian of Belgrade, who was cured in fifteen days after having suffered for eight years from necrosis of the left femur to such an extent that he had been compelled to use crutches.

The rapid exhaustion of supplies of nitrate from Chile has given great importance to the problem of using the air's free nitrogen for farming and other purposes. Dr. Frank of Charlottenburg has called attention to a method of fixing atmospheric nitrogen through the carbides of the alkaline earth metals. Barium carbide, for instance, and by absorbing the nitrogen is converted directly into barium cyanide. Calcium carbide is made by electric power to yield calcium cyanamide. Heating with water under high pressure converts this into calcium carbonate and ammonia, and experiments have shown the calcium cyanamide to be a very good fertilizer.

Capable of a wide range of work is the new electric furnace of M. Girod of Annecy, France, which consists of a crucible of graphite or refractory earth, heated on the outside by means of the resistance offered to an electric current by an envelope of graphite. The furnace is mounted on a horizontal shaft, so that it may be oscillated or tipped over, like a Bessemer converter, over the passage of the current. The voltage, usually twenty to twenty-five, may be raised to seventy or eighty, and the temperature can be regulated at any point from less than 500° C. to 3000° or even higher. It is simple and continuous in operation. It can be used for making castings, including those of the most refractory metals, and for reheating ingots and bars for the forge, and one man can tend three or four furnaces in casting.

A striking experience has been reported in Germany by Herr Dietrich. For fifteen years he has made a weekly mental examination of the forty-five to sixty men at work in a Baden storage-battery factory, where the fumes of phosphoric acid are almost suffocating. Severe respiratory irritation and poisoning would be expected, however, and has been struck with the soundness of the membrane of the upper air passages. Tuberculosis is unknown, catarrhal affections are short. The general health averages twice as high as in neighboring machine shops, and Dr. Dietrich suggests phosphoric-acid fumes as a new remedy for disease.

**Home Dressmaking.**  
Illustrated by Mary Munson.

**4887 Infant's Robe.**  
one size.

This very pretty little robe is made of Persian lawn with the frill and bands of fine embroidery, and is charmingly attractive, but it can be reproduced in any one of the fabrics used for the purpose.

The robe is eminently simple, and consists of a square yoke, to which the full skirt portion is attached. Over the shoulders are wide frills that give breath and dignity to the baby figure and the neck is finished with a narrow frill of lace. The sleeves are full, gathered into cuffs, and the edges are to match the neck.

The quantity of material required for the medium size is 2 1/2 yards 28 inches wide, with 4 yards of wide embroidery, 1 yard of narrow and 4 yards of insertion to trim as illustrated.

The pattern, 4887, is cut in one size only.



**4888 Lady Doll's Underwear.**  
14, 18, 22 inches.

Lady dolls require to be equipped with dainty underwear, and with smart gowns and fashions, and the outfit shown is a complete, and will quite surely delight the young mother's heart as well as provide a fitting object lesson in the use of buttons, buttonholes, ribbons and the like. The gowns and dresses are made of fine muslin, with a lining of lace and beading threaded with ribbon, but embroidery can be substituted as a finish, and any of the materials used for the under garments of real folk are suitable.

The set consists of two petticoats, corset cover, chemise and drawers, each of which is cut and shaped with care. The chemise is the fashionable one in square shape. The drawers are wide and ample, and are finished with a narrow band. The corset cover is made after one of the latest designs, and is drawn up to fit snugly at the neck by means of beading threaded with narrow ribbon. The short petticoat is made of straight embroidered edging or flannel and joined to a yoke, but the long one is cored and finished with a straight, simple, which is beaded with insertion and finished with a foot full of lace.

The quantity of material required for a doll 18 inches high is 1 yard 36 inches wide with 1 yard of embroidery 7 inches wide, and short petticoat, 4 yards of edging and 4 yards of insertion to trim as illustrated.

The pattern, 4888, is cut in sizes for dolls of 14, 18 and 22 inches in length.

**4889 Fancy Belts.**  
one size.

The demand for belts is increasing. At the moment the tendency is toward the wider sort, but almost everything is correct. Crush belts, round belts, pointed belts all are worn and width is made to depend largely upon individual needs. The four shown include a generous variety, but are all somewhat wider at the back, narrower at the front, so forming the lines that are best liked and most generally becoming. No. 1 is made of plain de cing and is made plaited at the back, where it is held in place by strips of bone, and passed through a ring at the centre front, the ends being cut to form points. No. 2 is a pointed effect at the front and round at the back. The material is taffeta simply stitched. The round portion and the pointed one are separate and are joined by means of small buckles. No. 3 is wide and round, but shaped at the end and held by a buckle. The model is made of black satin with applique of white cloth, but many combinations are to be seen. No. 4 is another draped belt, but of quite a different sort from No. 2. The material is liberty ribbon, with trimming of straps passed through small crocheted rings at the back and a fastening formed by bigger rings. The back is laid in plaits that are held in place by upright strips of bone and the ends are drawn through the rings.

The quantity of material required for all four belts is 1 1/2 yards of silk 24 inches wide, or 3 yards of ribbon 6 inches wide.

The pattern, 4889, is cut in one size only.

**4890 Shirred Skirt.**  
32 to 40 bust.

Full-length skirt panels combined with shirred ends and back make some of the most fashionable and becoming skirts of the season. The panels are variously made of the material or of lace and can be plain or trimmed, as may be, but always give the unbroken line of the skirt, and by the use of a wide band of champagne-colored voile, and shows the panel overlaid with a deep pointed garniture of cream-colored lace, but all of the season's soft wools and silks are equally appropriate.

The skirt consists of the front and circular portions, that are shirred to form a yoke and again to give the effect of a deep, graduated flounce. The shirring over the hips are held in place by means of a foundation yoke, those at flounce depth by means of a strap that is cut of the exact width and length. At each side of the front are tucks that are stitched to flounce depth, left free below.

The quantity of material required for the medium size is 11 yards 21 inches wide, 9 yards 27 inches wide or 9 yards 44 inches wide.

The pattern, 4890, is cut in sizes for a 22, 24, 26, 28 and 30-inch waist measure.

**4891 Shirred Skirt.**  
32 to 40 bust.

Full-length skirt panels combined with shirred ends and back make some of the most fashionable and becoming skirts of the season. The panels are variously made of the material or of lace and can be plain or trimmed, as may be, but always give the unbroken line of the skirt, and by the use of a wide band of champagne-colored voile, and shows the panel overlaid with a deep pointed garniture of cream-colored lace, but all of the season's soft wools and silks are equally appropriate.

The skirt consists of the front and circular portions, that are shirred to form a yoke and again to give the effect of a deep, graduated flounce. The shirring over the hips are held in place by means of a foundation yoke, those at flounce depth by means of a strap that is cut of the exact width and length. At each side of the front are tucks that are stitched to flounce depth, left free below.

The quantity of material required for the medium size is 11 yards 21 inches wide, 9 yards 27 inches wide or 9 yards 44 inches wide.

The pattern, 4891, is cut in sizes for a 22, 24, 26, 28 and 30-inch waist measure.

**4892 Shirred Skirt.**  
32 to 40 bust.

Full-length skirt panels combined with shirred ends and back make some of the most fashionable and becoming skirts of the season. The panels are variously made of the material or of lace and can be plain or trimmed, as may be, but always give the unbroken line of the skirt, and by the use of a wide band of champagne-colored voile, and shows the panel overlaid with a deep pointed garniture of cream-colored lace, but all of the season's soft wools and silks are equally appropriate.

The skirt consists of the front and circular portions, that are shirred to form a yoke and again to give the effect of a deep, graduated flounce. The shirring over the hips are held in place by means of a foundation yoke, those at flounce depth by means of a strap that is cut of the exact width and length. At each side of the front are tucks that are stitched to flounce depth, left free below.

The quantity of material required for the medium size is 11 yards 21 inches wide, 9 yards 27 inches wide or 9 yards 44 inches wide.

The pattern, 4892, is cut in sizes for a 22, 24, 26, 28 and 30-inch waist measure.

**4893 Shirred Skirt.**  
32 to 40 bust.

Full-length skirt panels combined with shirred ends and back make some of the most fashionable and becoming skirts of the season. The panels are variously made of the material or of lace and can be plain or trimmed, as may be, but always give the unbroken line of the skirt, and by the use of a wide band of champagne-colored voile, and shows the panel overlaid with a deep pointed garniture of cream-colored lace, but all of the season's soft wools and silks are equally appropriate.

The skirt consists of the front and circular portions, that are shirred to form a yoke and again to give the effect of a deep, graduated flounce. The shirring over the hips are held in place by means of a foundation yoke, those at flounce depth by means of a strap that is cut of the exact width and length. At each side of the front are tucks that are stitched to flounce depth, left free below.

The quantity of material required for the medium size is 11 yards 21 inches wide, 9 yards 27 inches wide or 9 yards 44 inches wide.

The pattern, 4893, is cut in sizes for a 22, 24, 26, 28 and 30-inch waist measure.

**4894 Shirred Skirt.**  
32 to 40 bust.

Full-length skirt panels combined with shirred ends and back make some of the most fashionable and becoming skirts of the season. The panels are variously made of the material or of lace and can be plain or trimmed, as may be, but always give the unbroken line of the skirt, and by the use of a wide band of champagne-colored voile, and shows the panel overlaid with a deep pointed garniture of cream-colored lace, but all of the season's soft wools and silks are equally appropriate.

The skirt consists of the front and circular portions, that are shirred to form a yoke and again to give the effect of a deep, graduated flounce. The shirring over the hips are held in place by means of a foundation yoke, those at flounce depth by means of a strap that is cut of the exact width and length. At each side of the front are tucks that are stitched to flounce depth, left free below.

The quantity of material required for the medium size is 11 yards 21 inches wide, 9 yards 27 inches wide or 9 yards 44 inches wide.

The pattern, 4894, is cut in sizes for a 22, 24, 26, 28 and 30-inch waist measure.

**4895 Shirred Skirt.**  
32 to 40 bust.



## The Horse.

### How Horses are Fed.

The United States Army feeds its cavalry and artillery horses twenty pounds of oats and fourteen pounds of hay per day per thousand pounds of weight, and its mules nine pounds of oats and fourteen pounds of hay. The Wyoming station feeds its driving horses 21.25 pounds of alfalfa and 3.2 pounds of straw, and its carriage horses ten pounds of oats and twelve pounds of hay per thousand pounds of weight per day. The Boston fire company feeds its horses 9.38 pounds of grain and eighteen pounds of hay, and the Chicago fire company feeds four pounds of oats and fifteen pounds of hay all per thousand pounds of weight, per day. The Richmond (Va.) Express Company feeds its horses 4.67 pounds of corn, 5.33 pounds of oats, eight pounds of bran, 4.16 pounds of corn meal and fifteen pounds of hay. The Jersey City Express Company feeds two pounds of corn, nineteen pounds of oats, 1.15 pounds of bran and 9.5 pounds of hay, and the Boston Express Company feeds twelve pounds of corn, 5.25 pounds of oats and twenty pounds of hay. The Wyoming station feeds its farm horses 13.75 pounds of alfalfa and 2.25 pounds of straw per day. The Utah station feeds its farm horses twenty-five pounds of alfalfa and ten pounds of bran, or 22.8 pounds of timothy hay and ten pounds of bran. It will be noticed that at all these Western stations alfalfa hay is a preferred feed for farm horses. At Chicago the daily ration of the draft horses of large companies is 7.5 pounds of oats and twenty pounds of hay, and in South Omaha fifteen pounds of oats and twelve pounds of hay.

Lou Dillon (1.584) recently trotted a quarter mile on the New York Speedway in 29.2 seconds, which is at the rate of 1.45 for a mile.

The record of Crescens in now under fire. It is claimed that the timers were inexperienced, and that outside watches held by experienced men caught the mile in 2.05 and 2.06. It would take more than inexperienced to make an error of five or six seconds in a horse's time under the circumstances. Crescens has earned about \$30,000 in the stud and in exhibitions this year.

The Bible says, "the horse is a vain thing for safety." Conversely thinks the New York World, now that the show is on in that city, the horse show is a "safe thing" for vanity.

Considerable Western comment has been made to the War Department against the establishment of proposed remount stations, where animals to be used by the army may be trained before they are turned over to the troops. The suggestion had been made by the army officials that the Government might develop its depots to such an extent that it could raise animals for its own use. Such a movement, however, would make the Government a competitor of the ranchers and farmers of the West and South now supplying the army, and protests against such action have been made. In some of the European countries government farms have been established where horses are bred particularly for the cavalry, notably in France and England.

### Hog-Killing Time on the Farm.

The best meat is obtained from hogs that are kept growing and putting on flesh close up to killing time. The animal should not be fed for about twenty-four hours before slaughter.

When a pig is to be killed see that the knives are sharp and in good form, and that everything is in readiness for scraping and hanging the carcass. A cheap and suitable scalding vat can be found in a paraffin can, which may be set in a slanting position at the end of the scraping table, which should be about six feet long, two feet six inches wide and two feet high. The water should be at a temperature of between 180° and 185° when the hog is placed therein. If too hot or too cold the hair will not come off properly. The old-fashioned plan of testing the temperature was to pour a few drops of the pig's blood into the water; if it spread evenly over the surface the temperature was considered right. The water should not be removed from the vat until it is quite boiling, and then if put into a cold barrel the temperature will be about right when the pig is ready to be put into it. A small shovel of wood ashes or a large handful of soft soap put into the water will facilitate the loosening of the scurf.

After sticking or shooting the pig, wait until life is quite extinct before putting into the water. If this is not done, the blood in the capillaries of the skin will be coagulated and the skin be reddened. Try the hair often to know when sufficiently scalded. Remove the hair from the feet and head with the hands, or with a scraper—the lid of an old coffee pot is an excellent implement—and then from the body. If properly scalded it will come off easily. When the hair is removed scrape the body clean, and trim it up with a sharp knife. Hang the carcass up, wash with hot water,



CUTTING UP A PORK CARCASS.

then scrape, rinse with cold water, and be careful to remove all scurf. Open the body, put the intestines down and separate the connections near the kidneys, leaving the kidney fat intact. Remove the paunch with the intestines, keeping all clean, so as to preserve the fat. Cut around the diaphragm, and remove the lungs and heart together with the windpipe. Remove the tongue.

### CUTTING THE CARCASS.

A convenient way of cutting the carcass is shown in the illustration. Three cross sections are made, one removes the head, the next the shoulders between the fourth and fifth ribs, the next takes off the hams. The carcass can then be easily sawed through with the meat saw. This plan requires very little trimming for the hams. Shoulders can be trimmed easily by removing the ribs or neck piece, and cutting away the scraps for sausage and lard. The middle piece is then split through the centre, and the lower two-thirds of the side removed, sawing through the ribs. The ribs are then taken out of the side piece, leaving the lean meat on the side. A part of the flank may be removed for lard, and the remainder will be available to be cured for bacon.

The lean meat on the upper third of the

back, including the ribs, is called the pork loin, and is excellent for chops or roasting pieces. Fat trimmings may be used for lard and the lean trimmings for sausage. The head and feet are scraped and cleaned and used for head cheese, or pickled. Meat should never be salted until thoroughly cooled, after which the quicker it goes into the salt barrel the better.

In salting down, especially during the cool weather and for winter use, it is advisable to use some sugar with the salt and saltpetre, in order to give it a milder, sweeter cure. A good recipe is as follows: eight pounds common coarse salt; two pounds brown sugar, or one quart of molasses; two ounces saltpetre and four gallons water to each one hundred pounds meat. In warm weather two pounds more salt, and two pounds more saltpetre should be used. The meat should be packed closely in a clean barrel (hardwood preferred), or in a stone jar large enough to hold the required amount. The salt, saltpetre and sugar are dissolved in the water and then turned over the meat.

If there is not sufficient of the brine to cover the meat, more brine of the same strength is added, as any portion of the meat uncovered is likely to rust and spoil, and in a short time the brine in the whole barrel would be spoiled. A cover and weight should be placed on the meat to keep it below the brine. In warm weather it is advisable to boil the brine and allow it to cool before putting it over the meat. The sugar, if used in larger quantities, is likely to make a "ropy" brine and one which will not keep so long as one without sugar, but, if the pork is cured in the winter for summer use, this will give the meat a good flavor, and it will not be so tough and hard as when cured in clear salt. The brine has not strength enough to overcome the meat, but still it has sufficient to keep it for almost any length of time. Six to eight weeks in the brine of this strength will cure bacon and hams weighing twelve to fourteen pounds. While it may remain in the brine much longer than that, the best quality of meat will be obtained if removed from the brine as soon as cured through. Smoke and pack away for summer keeping.

### FAMOUS RECEIPTS FOR CURING MEATS.

Notwithstanding the fact that the great packing firms of the United States claim to produce the finest pickled and smoked meats that is possible with all the facilities of modern methods and scientific formulas, the fact remains that a great majority of the lovers of fine hams, bacon and corned beef are better satisfied with a really good article of domestic preparation, though not every one knows how nor has the proper judgment to obtain the most satisfactory results, even though they have the materials and the receipts. The Smithfield hams and bacon of Virginia have a wide renown; they deserve it. Contrary to a general belief, the term Smithfield does not designate a special brand of commercial commodity, or a certain packing such as Armour's or Swift's or others; it is derived from the locality in Virginia where the meats are cured and from which they are marketed, not from any packing firm or establishment. They are not necessarily confined to one town or neighborhood; there are dozens of farms or plantations in Virginia where Smithfield hams are to be had. But the fattening of the pork, the pickling and smoking are always the same, and there are no better known to humans.

The "Ashland Hams," which were made at the old plantation of Henry Clay, enjoyed a high reputation for their superior qualities, and usually commanded the very highest prices when shipped to the Boston market, as were many hogheads of this meat each year. The receipt for curing these celebrated hams was used by Mrs. Henry Clay for many years, and was given to an old friend of the writer's father years ago. It is as follows: For every ten hams of moderate size, she took 3½ pounds of salt, one pound of saltpetre and two pounds of brown sugar; these ingredients were mixed thoroughly together and the hams rubbed down with it on every side. The hams were then packed in a tight box or barrel, and placed in a cool place for three weeks, at the end of which time they were taken out, put in a pickling tub or hoghead and covered with lime of sufficient strength to float an egg. After remaining in this pickle about a fortnight, they were taken out, rubbed lightly with fine salt, and hung up in a well-ventilated place to dry for two or three days, after which they were transferred to the smoke house, hung up about three or four inches apart and smoked carefully with hickory or walnut wood until they had taken on the hue of bright mahogany. This completed the process.

The hams were then sewed up in canvas or muslin coverings, whitewashed and hung up to dry for about a week. Another coat of whitewash was then applied when the hams were packed away in hogheads or boxes, with either hickory ashes or sawdust, until they were wanted for use in the family, or for shipment to Boston.

Monroe, Mich. JOHN M. BUCKLEY.

### Notes from Washington, D. C.

The forthcoming report of the Secretary of Agriculture congratulates the country upon having a more effective farm department in the national administration than ever before. The secretary mentions his department as a sort of post-graduate institution of agricultural learning, which offers an opportunity for young men to fit themselves for special lines of scientific farm work and investigation. A closer cooperation is noted and encouraged between the scientists of the department and those of the various State government experiment stations to the end that broad, agricultural experiments may be carried on without duplication or waste of effort or money. The consideration of agriculture as a science and its teaching is receiving more attention in the schools and colleges throughout the country.

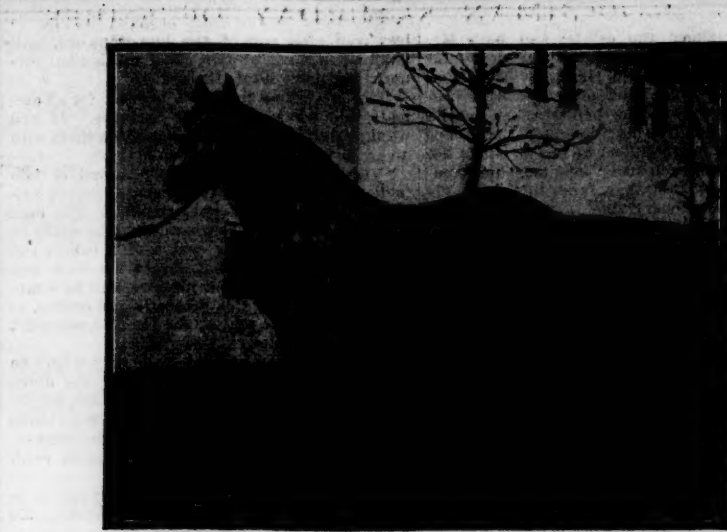
The secretary notes the fact that practically all of the plants of most value to us have at some time or other been imported from foreign lands, and he believes there are many discoveries and importations to be made which will eventually result in great additional wealth to American farmers. In this connection, however, Mr. Wilson calls attention to the great danger to the farm,

### Horse Owners! Use

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The safest, best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERBLY ALLEVIATES ITCHING AND BRUISES. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, the express prepay with full directions for its use. Send for descriptive circular.

THE LAWRENCE-WILLIAMS CO., Cleveland, O.



STALLION, WENONA SULTAN.  
Whitehall Farm. E. S. Kelley, Springfield, Ohio.

fruit and live-stock industries through the possible introduction of new weeds, insect pests and diseases, and the necessity of thorough Government inspection, as well as remedial activity. While in the past many products of great value have been introduced from abroad, pests of equally great injurious capacity have likewise been imported, causing an annual loss to the farmers of millions of dollars.

The Bureau of Animal Industry has been especially busy in its inspection of interstate shipments of live stock, carcasses, and meat products and exportations of the same; in the successful stamping out of the foot and mouth disease in New England which constituted a serious menace to the entire live-stock industry of the country; in its efforts to increase our foreign market for dairy products and in experiments to control animal diseases, such as Texas fever, black leg, sheep scabies, hog cholera, etc. Over a million and half doses of black-leg vaccine were distributed free during the year, saving thousands of head of cattle.

Much attention has been given during the year to the extension of our fruit trade in foreign markets. Experimental shipments have been made of apples, both early and late, peaches, pears and sweet potatoes. Net returns to the fruit growers have usually exceeded domestic values, but the secretary points out the necessity of a thorough and systematic study of the foreign markets, requiring a resident American agent in each such field.

Since the continued fertility of the soil is dependent more upon the supply of nitrogen than upon any other fertilizer, and since the air contains an inexhaustible supply of this gas, the work of improving and introducing nitrogen-gathering plants, of which the clover and the cow-pea are common examples, is considered of great importance. This power of certain plants to store fertility in their leaves, extracted from the air, is made possible by certain bacteria which infest the roots of these plants, and the division of plant pathology has worked out a new method of producing such bacteria of great nitrogen-gathering power.

During the year important work has been done along the lines of investigating grass and forage plants. With the exception of corn the American hay crop exceeds that of any other in value. The question of the maintenance of soil fertility largely controls forage production. Alfalfa, the great forage crop of the West, is being successfully introduced in the East, and in the Northern States the secretary believes it will prove a better crop than clover. In the crop and soil builder, as clover has been in the North, the department is making a close study of the thirty or forty varieties of this plant.

The work of congressional seed distribution has become an immense undertaking. The secretary disclaims the intention of any wish to interfere with the seed trade of the country, and desires that Government seed distribution shall take the form of seed and plant introduction of new and experimental varieties. For several years past Hon. Bagby D. G. Fairchild, an agricultural explorer for the department, has visited remote sections of the globe, and has introduced and distributed through the department valuable foreign plants, such as hardy bamboos, date trees, Egyptian clover, etc.

An important discovery has been made regarding macaroni wheat. This is an extremely hard variety of wheat, and will thrive throughout a considerable belt of the country where ordinary wheat will not make a profitable crop. Not only the secretary believes, can we produce all our own macaroni from home-grown wheat, but it has been found that this hard wheat will produce excellent bread, a fact not heretofore known. The introduction of this variety will add millions of bushels annually to the American wheat crop.

The Bureau of Forestry has been exceptionally active, and its work is moving along such lines as involve not only the economical management of the public forests, but as well the general introduction of methods of reforestation of private forests. Instead of careless and wasteful lumbering, as has been in vogue in the past, the secretary believes that owners of forests will gradually recognize that at a slight additional cost per acre, lumbering operations can be so conducted as to make the forests an everlasting source of income. In other words, forests can be farmed and annual crops of lumber produced therefrom, at the same time conserving the nation's water supply and largely mitigating floods and checking the disastrous effect of wind storms, which have, owing to the denudation of great areas, been increasing year by year. The Forestry Bureau has also given much attention to tree planting, resulting in an aggregate reforestation of great areas.

The Bureau of Soils has had experts working in every State and territory making "underground maps" of their agricultural soils. The tobacco investigations of this bureau have demonstrated that the best grades of Sumatra cigar wrappers, the highest priced tobacco grown, can be produced in Connecticut by a system of partial shading. Soil surveys have also shown that some sections of Pennsylvania, New York Wisconsin, Texas and other States demonstrate them capable of duplicating Sumatra and Cuban tobacco. Important investigations of this bureau have been made in drainage. Some six hundred thousand acres of Western irrigated lands have been troubled with the rise of alkali to the surface, injuring or killing the crops. Experiments in drainage and washing have shown that the worst alkali lands can, at reasonable cost, be entirely reclaimed to cultivation.

The office of experiment stations has brought the department in closer touch with the various State scientists. While the department realizes that every State is peculiarly fitted to deal with its own local conditions, the parent office is in a position to render most effective aid, especially in the distribution of new importations.

The secretary comments on the excellent results of object lessons in good roads construction. The National Good Roads Association and railroad corporations have cooperated with the department in this work, as have also State and county officials, educational institutions and experiment stations. Sample good roads have been built in Maryland, West Virginia, Ohio and North Carolina.

### Said at National Grange Meeting.

Agriculture has not enjoyed an equal degree of prosperity with manufacturers and other industrial and commercial interests in the United States. The causes that have contributed to this condition are partly the fault of the farmers themselves and partly the result of conditions over which they have no direct control. Farmers must first remove all hindrances to their success under their control; must have a thorough knowledge of their business in all its details; must understand the nature of soils, kinds of crops best adapted to their lands; when and how and what kind of fertilizers to apply; how best to prepare the soil and cultivate his crops; what kind of domestic animals are best suited to his particular farm and conditions, and how to breed, care for and feed them. He must understand how, when and where to market all the products of his farm to yield him the highest percentage of profit. He should cultivate a love for and appreciation of his calling, and should never underrate its importance, and should at all times feel and act that it was and is as honorable to be a good farmer as a good merchant, banker, manufacturer or any other business or profession. Add to the above qualifications, sterling integrity, honesty, energy, system and a complete set of books, showing cost of every product of the farm, with a general and specific knowledge of the conditions of supply and demand of all the products of the farm in the market of his own country and the world, places him in a position to attain success and enjoy prosperity as far as the matter is under his control.—National Master Jones.

The rapid strides recently made in this country in manufacturing, transportation and commercial interests and the attendant consideration of matters relating to those interests, has caused a relative decline in agricultural sentiment. It is the duty of this organization to promulgate in the most effective manner the sentiment that agriculture is the foundation of all industrial, commercial and transportation activity, and is entitled to all the rights conferred by such commanding position. Agriculture should be classed with no other industry in considering its rights. We are justified in demanding that every public official from the President of the United States to local officials with authority, recognize the basic nature of agriculture and deal with it accordingly. It is not necessary that all should be farmers, but it is necessary to the upbuilding of agriculture that its importance be more generally recognized than has occurred in the past. We must place agriculture where it belongs, among the industries of the country, and then the farmers will take their rightful position as leaders in the affairs of State and nation.—N. J. Bachelder, National Lecturer.

We have really not yet begun the development of agriculture in this country. Those of us connected with our agricultural colleges see this perhaps as others may not. All the newer subjects relative to agriculture have had to force themselves into our schools and colleges. Now in nearly all the States these agricultural subjects are taught. In the next ten years you will see greater developments in agricultural education than ever before. The emphasis has been placed on the growing of larger crops, but in the next ten years the emphasis will be placed on the means by which the farmer may be reached.

We can train men's minds by the study of the growth of crops on the farm as we can by the study of Latin and Greek, although I would not have the one displace the other. We are now taking hold of these country life problems. I believe that the greatest field yet remaining in the field of agriculture. The problem of the future is the rural school, and in this the Grange is vitally interested. I am a member of a number of organizations, but if I could be in one only and work for one only, it would be the Grange.—L. H. Bailey, Dean, Cornell College of Agriculture.

If combinations of capital and labor will not consider the interests and rights of those outside their organizations, then it is time that the majority of the people, who pay most of the taxes and maintain the nation, should force their interests on the attention of these organizations and the country. They can make the laws and enforce them, upon which both organized capital and labor depend; and it clearly becomes their duty to do so.—James Wilson, Secretary of Agriculture.

The following Granges were organized: Colorado, one; Delaware, seven; Illinois, one; Kansas, three; Kentucky, seven; Maine, four; Massachusetts, 6; Maryland, one; Michigan, seventeen; Missouri, one; New Jersey, seven; Ohio, three; Pennsylvania, one; South Carolina, one; West Virginia, sixteen; Wisconsin, five; total, eighty-one. Compared with last year (1902) seventy-two new Granges were organized, 30 more at 12th degree certificates were issued, while the sales of stock were increased 1,079.61, and the total receipts, eliminating the balance in the secretary's bank, were greater by \$117,881. This year the outlook is much better than last year.

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